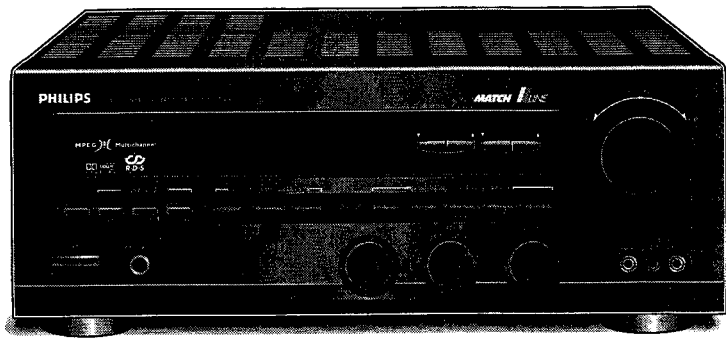
Digital home cinema receiver

FR980

FR980/001

Service
Service
Service



Service Manual

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Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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Subject to modification

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PHILIPS

TECHNICAL SPECIFICATIONS

FM TUNER SECTION

Frequency Range		87.5 - 108.0MHz
Usable Sensitivity	IHF	1.3µV / 13.5dBf
S / N	Mono / Stereo	76 / 68dB
THD	Mono / Stereo	0.2 / 0.5%
Stereo Separation	1kHz	40dB
ACS	400kHz	60dB
Image Rejection	98MHz	50dB
Output Level	1kHz 75kHz Dev.	700mV

AM TUNER SECTION

Frequency Range		520 - 1710kHz : 10kHz Step, 531 ~ 1602 : 9kHz Step
Usable Sensitivity	Loop	500µV
S / N		50dB
THD	1kHz 30% Mod	0.5%
Selectivity	10kHz	25dB

AUDIO SECTION

Power Output		
Front L / R	20 - 20kz 8ohms	60W x 2
Center	20 - 20kHz 8ohm	60W x 1
Surround	40 - 20kHz 8ohms	60W x 2
THD	Front L / R 20 - 20kHz 8ohms	0.05%
Input Sens / Imp	High Level	220mV / 50kohm
L / R Channel Crosstalk 1kHz		80dB
Freqency Response (Analog Stereo) -2dB		10 - 50kHz
S / NIHF-A		85dB
Dolby Ch Separation 1kHz L / C / R / S (AC-3)		60dB
Surround Delay Tine		MPEG, AC-3 : 0 - 15m Sec (common) Pro Logic : 15 - 30m Sec (relate to AC-3 setting) Other : 40 - 90m Sec

VIDEO SECTION

Input Sens / Imp	Composit	1.0Vpp / 75ohm
Output Level / Imp	Composit	1.0Vpp / 75ohm
Frequency Response -1dB		10 - 8MHz
S / N		55dB
Crosstalk		50dB

OTHERS

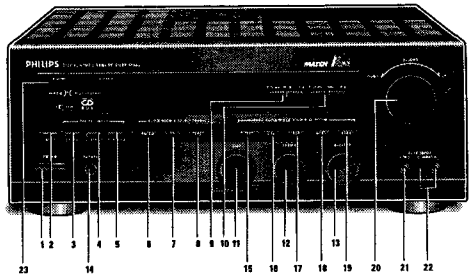
Mains Voltage	110 / 115 / 220 / 230V
Mains Frequency	50 / 60Hz
Backup	1 Week
Initialisation	Audio : Digital (Coa x 1) Video : DVD Mode : MPEG VOLTAGE : 230V OSD : PAL SCAN STEP : 10kHz
Dimensions (W x D x H)	439 x 458 x 158mm
Weight	13.0kg

ACCESSORIES SUPPLIED

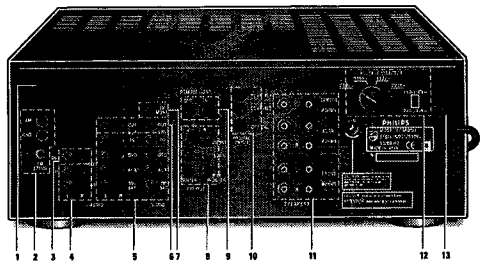
Remote Control	RC980FR + Batteries, 2 x AAA
FM Feeder Antenna	1 x Ribbon Type
AM Loop Antenna	1 x
Fuse	1 x 110V / 115V (T6.3A)

DIGITAL HOME CINEMA RECEIVER - FR980

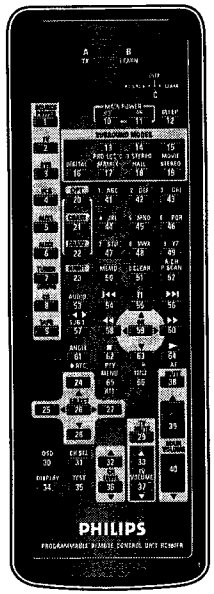
Front panel



Rear panel



Remote Control



Front panel

1 **Power On/Off button**
2 **Night**

Digital input
3 OPTICAL
4 COAXIAL1
5 COAXIAL2

Audio source selector
6 FM/AM
7 CD
8 TAPE

Tuner controls
9 Preset up/down
10 Tuning up/down

Sound control
11 BASS
12 TREBLE
13 BALANCE

Phone
14 Headphone jack

Audio/video source selector
15 TV/SAT
16 DVD
17 VCR
18 AUX 1
19 AUX 2

Volume
20 Control up/down

AUX 2 input
21 *VIDEO*
22 AUDIO left/right

Rear panel

1 AM tuning switch

Antenne connections
2 AM, GND, FM (coaxial)

Audio output
3 TAPE

Audio input
4 CD and TAPE

Audio/Video input
5 VCR, DVD, AUX 1, TV/SAT

Audio/Video output
6 VCR

TV output
7 TV/MONITOR

Pre-amplifier output
8 FRONT left/right, SURROUND left/right, CENTER, SUB-WOOFER

Remote control
9 IN and OUT

Digital input
10 COAXIAL1, COAXIAL2 and OPTICAL

Speaker output
11 CENTER left/right, SURROUND left/right, FRONT left/right

Voltage selector
12 110V, 115V, 220V and 230V
13 Mains

Remote Control

LED indication

A LEARNING mode
B *TRANSMITTING mode*

Mode switch
C Switch remote into NORMAL operation/USER defined or LEARNING mode

Source power
1 Switch POWER on/off of selected source

Audio/Video source selection
2 TV
3 DVD
4 VCR
5 AUX1
6 AUX2

Audio source selection
7 TUNER
8 CD
9 TAPE

Receiver controls
10 POWER Off
11 POWER On
12 SLEEP Mode
23 NIGHT switch (optimal sound reproduction at low volume)
24/28 Cursor Control (OSD) and SELECT
30 On Screen Display (OSD) with satus info
34 Receiver DISPLAY on/off
38 MUTE
39 VOLUME Up
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41/49, 51 Numeric keys
50 MEMORY enable for various preset functions
52 *Preset SCAN*

Surround modes selection
13 PRO LOGIC
14 3 STEREO
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16 DIGITAL (MPEG2/Dolby Digital)
17 MATRIX
18 HALL
19 STEREO

Digital input selection
20 OPTICAL
21 COAX1
22 COAX2

TV controls
29 MUTE
33 VOLUME Up
37 VOLUME Down

Speaker conrols
31 CHANNEL selection
32 CHANNEL Up
36 CHANNEL Down
35 TEST Tone

DVD controls
53 AUDIO
54 Previous
55 Pause/Cursor Up
56 Next
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59 OK
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62 Stop
63 Slow/Cursor Down
64 Play
65 MENU
66 TITLE

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INTRODUCTION

Philips welcomes you to the brilliant new world of Digital Home Cinema. To the FR 980, the first Digital Home Cinema receiver, capable of decoding DVD-Video as well as other digital and analogue multichannel audio signals, and with five independent high-performance sound channels.

As the control centre for your Home Cinema or A/V system, this world-standard receiver features multistandard digital surround decoding and full audio and video interconnection and remote control facilities, together with multivoltage AC power input and a multistandard On-Screen Display output for your TV.

Safety precautions

Placement notes for cabinet:
To ensure proper ventilation for the amplifier, do not mount it in a rack or locate it inside a bookshelf.

Note the following precautions:
- ***Do not insert objects into the space underneath the amplifier.***
- ***Do not block the vents on the top of the amplifier.***
- ***Keep the area above the amplifier unobstructed for about one meter.***
- ***Allow approximately 20 centimeters of space on all sides of the amplifier.***
- ***Do not expose the equipment to rain or moisture.***
- ***Do not remove the cover from the equipment.***
- ***Do not push anything inside the equipment through the ventilation holes.***
- ***Do not handle the mains lead with wet hands.***

This Philips product has been prepared to comply with the household power and safety requirements that exist in your area. On the rear panel, a voltage selector (4-position) is provided. Be sure to set the voltage selector to the mains voltage of your area before using the unit.

INSTALLATION

Unpacking

First check and identify the contents of your FR 980 receiver package, as listed below:
- FR 980 receiver;
- Multisystem remote control handset with separately-packed batteries;
- Line fuse 6.3A;
- User Manual;
- Warranty card.

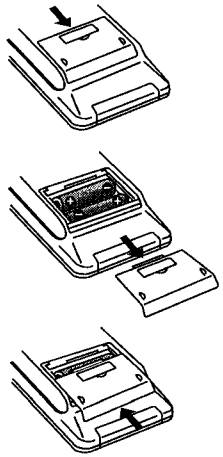
If any item should be damaged or missing, please inform your supplier without delay.

Keep the packaging materials: you may need them to transport your receiver in the future.

Placement

- Place the receiver on a firm, flat surface.
- Keep away from domestic heating equipment and direct sunlight.

Loading the batteries



- Open the battery compartment cover.
- Insert two 'AAA' (R03 or SUM4) batteries as indicated inside the battery compartment.
- Close the cover.

CAUTION

DO NOT MIX OLD AND NEW BATTERIES, AND NEVER MIX DIFFERENT TYPES OF BATTERIES (STANDARD, ALKALINE, AND SO ON).

NOTE

Batteries should be replaced within 10 minutes, or any already learned codes may be lost.

CONNECTIONS

The FR980 is designed to operate as the control centre for your complete Home Cinema, with full connection, selection, and remote control facilities for all the digital and analogue video and audio equipment in the installation.

When making connections: Consult the User Manuals for your video and audio sources and other peripheral equipment. Make sure the AC power is disconnected. Connect one equipment at a time, one cable at a time. Observe colour or other polarity codes on cables.

Connecting the power supply

- Set the Power Voltage Selector(s) to correspond to your local A.C. power supply.
- The installed 3.15A line fuse is correct for 220 or 230V AC supply. For a 110 or 115V AC supply, unscrew the line fuse holder cap, and fit the 6.3A line fuse supplied.
- Plug the receiver's power cable connector into a suitable AC outlet.

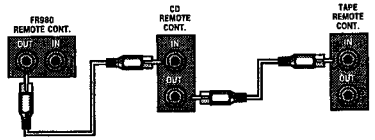
NOTE

When the receiver is plugged in, it always consumes some power, even in Standby. To remove the power completely, disconnect the power cable connector from the AC outlet.

Remote Control Bus

Philips audio and video equipment fitted with Remote Control In/Out connections can be controlled via the FR980.
Connect the receiver's Remote Control Out socket to the Remote Control In socket of the first equipment to be controlled.
Connect the Remote Control Out socket of the first equipment to be controlled to the Remote Control In socket of the second equipment to be controlled. Continue until all equipments to be controlled are linked together.

If you want to use a Philips Remote Control Extender, connect it to the receiver's Remote Control In socket.



Digital inputs

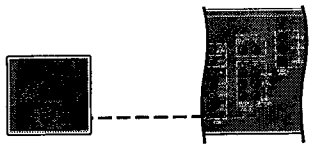
For digital surround sound, you must connect a digital output from your DVD-Video player to one of the digital inputs of the receiver. Use other digital inputs from e.g. CD and Laser Disc audio wherever possible.

Do not connect both optical and coaxial digital inputs from the same device.
Unless you are using the optical digital input, leave the protective cap in place over the coupling.

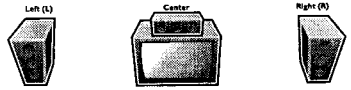
Digital Home Cinema speaker configurations

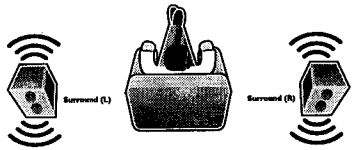
For the most realistic MPEG2 Digital Multichannel or Dolby Digital™ surround sound:

- Speaker configuration with sub-woofer (as shown above).
- Connect five identical high-quality multiway speakers (with Power Handling Capacity of at least 60W) to the Centre, Surround L/R and Front L/R speaker terminals. These speakers need not cover the lower bass range (below about 100 Hz), which is supplied by the subwoofer.
- Connect an active subwoofer (e.g. Philips FB201 or 202), or a separate amplifier and sub-woofer, to the Subwoofer pre-out socket. The Power Handling Capacity of the sub-woofer should be at least 60W.



Good results can also be obtained without a subwoofer (as shown below).





- Connect five identical high-quality multiway speakers (with Power Handling Capacity of at least 60W) to the Centre, Surround L/R and Front L/R speaker terminals. These speakers all need to be identical, full-frequency response types.
- The bass response of the five speakers creates a 'virtual subwoofer' centred on your seating area.

NOTE

Unless the front and surround speakers are full frequency response types, you must use a sub-woofer for satisfactory digital surround sound.

Working without a Centre speaker is also possible: in this case the Centre speaker's sound is distributed between the Front Left and Right speakers. This configuration is not recommended because most of the dialogue that locks the sound into the picture is carried by the centre channel.

If you wish to use external amplifiers to produce extra sound power, you can connect them to the Front L/R, Surround L/R and Center preamplifier outputs. In this case, the power handling capacity of the speakers should match the output power of the external amplifiers to which they are connected. In this configuration, no connections should be made to the Front L/R, Center, and Surround L/R speaker terminals.

These configurations are also suitable for Dolby Pro Logic™ and the other analogue surround sound modes, as well as stereo. In some cases some speakers will be inactive.

AM tuning step

Set this switch to 9 kHz to receive AM radio broadcasts in Europe, 10 kHz to receive them in the USA and Asia.

Antenna

- FM antenna terminal (75Ω).
  For connecting an external FM antenna with a coaxial cable, or for connecting a cable network FM source.
- AM antenna and ground terminals.
  For connecting the supplied AM loop antenna. Use the terminals marked AM and GND.

The supplied AM loop antenna will provide good AM reception in most areas. Position the loop antenna to the best reception.

Multisystem remote control

The remote control is programmed to operate Philips and related brand equipment using RC5 or RC6 remote control codes. But it also has a learning facility which allows it to be re-programmed for other equipment brands using other control codes.
The learning procedure is explained on page 12 of this manual.
Unless codes have been changed using the the learning procedure, the slider switch should be set to RC-5 (or User).
When codes have been changed using the the learning procedure, the SLIDER SWITCH [C] should be set to User.

Unless otherwise stated, all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.

Equivalent keys on the front panel may also be used.

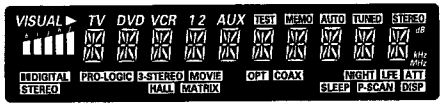
Switching on

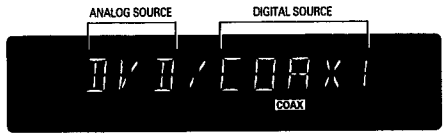
Switch on the TV and select the video input chosen for your receiver.

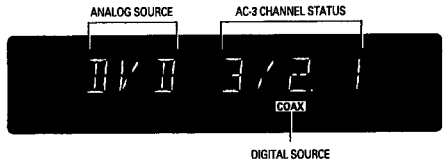
Switch on your receiver by pressing the MAIN POWER ON key [11] (or the Power switch on the front panel [1]).
Check that the display lights up.

Switch on the source or sources you intend to use.

Receiver Display







To help you operate the receiver, the alphanumeric section of the display presents dynamic operational messages, sometimes continuously, sometimes for just a few seconds.

Some examples include:
MASTER -64: Master volume control level in dBs.

DVD 3/2.1: Input source and sound channel configuration (DVD input, 3 front sound channels, 2 surround sound channels, 1 sub-woofer channel).

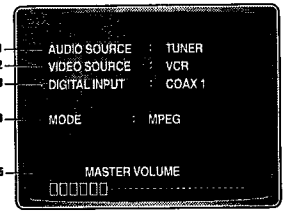
NO DATA: No digital input.

The current receiver settings are shown on the display: you can turn the display off and on by pressing the DISPLAY button [34]. When switched off, the display shows "DISP".

OSD On-Screen Display

You can call up the ON-SCREEN DISPLAY [30] on your TV to see the current receiver settings, to control most receiver functions, and to set up and test your receiver-loudspeaker configuration.

To see the current receiver settings displayed on the TV screen, press the OSD key [30].



1. Audio source.
2. Video source.
3. Digital input.
4. (Surround) Mode.
5. Master volume: the level is indicated by the number of blocks showing.

To turn off the OSD, press the OSD key again.

Changing the TV broadcast standard setting

The factory setting of the OSD is for the PAL TV broadcast standard. If your TV is a Secam or NTSC type, hold down the OSD key [30] until PAL appears on the Receiver Display, then press the OSD key once to set up Secam, or twice to set up NTSC (pressing the key a third time will return to PAL).

Digital Home Cinema:

DVD-Video with Digital Surround sound

The receiver is set to reproduce correctly synchronized Digital Surround sound in a listening area where the surround speakers are about 150 cm nearer to the listening position than the front speakers, and the centre speaker is in line with the front speakers. To adjust for other listening area arrangements, see Delay times in the Setup Section (page 11)

- Press the DVD key [3] twice: this selects the DVD-Video player as source, and sets the remote control to operate the player functions.
- Select the DVD-Video digital input by pressing the OPT [20], COAX 1 [21] or COAX 2 key [22] as appropriate.
- Press the SOURCE POWER key [1] to power up the DVD-Video player.
- Operate the DVD-Video player in accordance with the player User Manual: functions available on the remote control are shown in Table 2 on page 7.

NOTE

MPEG2 Digital Multichannel or Dolby Digital™ sound will be played automatically, depending on which is recorded on the disc.

Home cinema:

Playing video with Dolby Pro Logic™ surround sound

The receiver is set to reproduce correctly synchronized Dolby Pro Logic™ surround sound in a listening area where the surround speakers are about 150 cm nearer to the listening position than the front speakers. To adjust for other listening area arrangements, see Delay times in the Setup Section (page 11)

- Select your chosen video source by pressing the TV [2], VCR [4], AUX 1 [5] or AUX 2 key [6] twice: this selects the source, and sets the remote control to operate the source functions.
- Press the PRO LOGIC SURROUND mode key [13].
- Press the SOURCE POWER key [1] to power up the source.
- Operate the source in accordance with the relevant User Manual: functions available on the remote control are shown in Table 2.

Home cinema:

Other analogue surround sound modes

Analogue video source material is often accompanied by stereo audio, and almost all audio source material is in stereo.
The receiver allows you to select from several surround sound modes to create realistic surround sound effects from the stereo sound (as shown in the table below).

Mode	Characteristics
3-STEREO	Corrects the centre sound field directivity in Dolby Pro Logic™ systems with widely spaced Front Left and Right speakers.
MOVIE	5-channel analogue sound with extended delay time for large rooms.
HALL	4-channel analogue sound. Gives effect of medium-sized circular hall with rich reverberations.
MATRIX	Wide 4-channel analogue surround effect for sports events or live outdoor concerts.
STEREO	Regular 2-channel analogue sound.

To adjust the surround sound effect in Movie, Hall or Matrix surround mode, see Delay times in the Setup Section (page 11). No adjustment is necessary for 3-Stereo or Stereo mode.

- Select your chosen source by pressing the appropriate source key twice: this selects the source, and sets the remote control to operate the source functions.

No.	62	64	63	54	55	56	57	58	59	60	61	53	65	66
Name	■ PTY	▶ AF	AUDIO ◀ ▶	⏮	II ▲	⏭	SUBT	◀◀ ◀	OK	▶▶ ▶	ANGLE ● REC	D▶ ▼	MENU AST	TITLE
TV	--	--	BI-LANGUAL	CH-	--	CH+	--	CH-	--	CH+	LAST	--	--	--
DVD	STOP	PLAY	AUDIO	PREV	CURSOR UP	NEXT	SUBT	CURSOR LEFT	OK	CURSOR RIGHT	ANGLE	CURSOR DOWN	MENU	TITLE
VCR	STOP	PLAY	BI-LANGUAL	PREV	PAUSE	NEXT	--	REW	--	FF	REC	--	--	--
Aux 1 /Tape	STOP	PLAY	BI-LANGUAL	PREV	PAUSE	NEXT	--	REW	--	FF	LAST	--	--	--
Aux 2	--	--	--	--	--	--	--	--	--	--	LAST	--	--	--
Tuner	RDS PTY	RDS AF	STEREO /MONO	PREV CH	RDS DISPLAY	NEXT CH	--	TUNING DOWN	--	TUNING UP	LAST	--	--	--
CD	STOP	PLAY	RANDOM	PREV	PAUSE	NEXT	--	REW	--	FF	LAST	--	--	--
Tape	STOP	PLAY	DI-RECTION	PREV	PAUSE	NEXT	--	REW	--	FF	REC	--	--	--

-- : No output before learning.

Table 2

LAST: Refers to the last controlled system with recording capability: VCR, TAPE.

- Press the surround mode key appropriate to the source's audio material (see Table 2).
- Press the SOURCE POWER key [1] to power up the source.
- Operate the source in accordance with the relevant User Manual: functions available on the remote control are shown in Table 2.

Listening to a different audio source

while watching a video source: sound injection

- With the video souce selected as above, select your chosen audio source by pressing the Tuner, CD or Tape (for Cassette play) key, or the appropriate Optical or Coaxial key if you have a digital audio input connected.
- Operate the audio source in accordance with the relevant User Manual: functions available on the remote control are shown in Table 2.

Recording from a video source

- Select and play your chosen source as above.
- Press the ANGLE / ●REC key [61] to start recording on the last selected recorder (VCR or TAPE).

Night

If you are listening to low-volume music from a digital source, as at night, press this key [23] to prevent large surges in volume. This function only operates if the digital signal contains sound compression data.

Setting the Sleep timer

When you set the Sleep timer by pressing the SLEEP key [12], the receiver continues to run for the selected time after you set it to Standby. While the timer is activated, the remaining Sleep time is displayed for about 2 seconds when you press the Sleep key.

To set the Sleep timer:
- Press the SLEEP key [12] more than 3 seconds.
  On the receiver display, 'SLEEP' and 'MEMO' starts to flash.
- Press the SLEEP key [12] successively to step through the sleep time (10-90 minutes and Off).

To check the timer setting, press the SLEEP key [12] shortly.

To cancel the timer, press the SLEEP key [12] more than 3 seconds, and retry to set 'SLEEP OFF' by pressing the SLEEP key [12] again.

The tuner

Tuning

- Press the TUNER key [7] twice: this selects the tuner as source, and sets the remote control to operate the tuner functions.
- Press the TUNER key [7] on the remote control or the AM/FM key [6] on the front panel to select the required waveband.
- Press the TUNING UP ▶▶ [60] or DOWN ◀◀ [58] key to find a station. Press the key for less than half a second to change the frequency by one step. Keep pressed longer to scan the band: release the key while scanning to tune automatically to the next station, when the Tuned and Signal Strength indicators light on the display and tuning stops.

Presetting stations

You can preset a total of up to 30 stations either automatically or manually.

Auto presetting

- Press the TUNER key [7] on the remote control or the AM/FM key [6] on the front panel as necessary to select FM.
- Tune to the lowest receivable FM frequency.
- Start auto presetting by pressing the MEMO key [59], then hold down the TUNING UP ▶▶ [60] key for at least 3 seconds. Memo starts to flash on the display.
- The first (lowest) frequency is preset and '1' appears on the display.
- The tuner scans to the next receivable frequency and remains tuned there for 5 seconds. During this time, you can:
  - Skip the frequency by pressing the TUNING UP ▶▶ [60] key,
  - Press the AM/FM key [6] on the front panel to change the waveband.
- After 5 seconds, the frequency is preset, and '2' appears on the display.
- The procedure continues until:
  - All 30 preset locations are filled; or
  - Auto scanning reaches the top of both wavebands; or
  - You terminate auto presetting by pressing the 0 CLEAR key [51] (or TUNING DOWN ◀◀ [58] key or any function key).

Manual presetting

- Tune in to a station (see Tuning).
- Press the MEMO key [59]: on the receiver display, 'Memo' will flash for 5 seconds. During this time enter your chosen preset number (between 1 and 30) using the alphanumeric keys. For 2-digit numbers, enter the digits in quick succession.
- On the display, 'Memo' goes out, and the station preset is stored.

Selecting a preset station

- There are two methods of preset selection:
  - Enter the preset number using the alphanumeric keys. For 2-digit numbers, enter the digits in quick succession.
  - Press the PRESET UP ▶▶| [56] or DOWN |◀◀ [54] key to choose a preset. Press the key for less than half a second to move to the next preset. Keep pressed longer to scan the presets: release the key at the chosen preset. If no preset was previously selected, the lowest preset number will be selected first. (Refer to Table 2 on page 7)

Preset scanning

- Press the P-SCAN key [52]: on the receiver display, 'P-Scan' flashes.
- Starting with the lowest, each preset stored is selected for five seconds.
- To scan rapidly, hold down the PRESET UP ▶▶| [56] key.
- When you arrive at the desired preset, press the PRESET DOWN |◀◀ [54], P-SCAN [52] or 0 CLEAR key [51] to listen to the station.

Naming presets/Station names

The names of stations broadcasting Radio Data Services (RDS) are shown automatically on the receiver display when tuned. You can give similar 5-character names to non-RDS stations as follows:
- Select the preset station.
- Press the MEMO key [59] for more than 3 seconds: the station name bar appears on the receiver display, with the left-hand character space flashing.
- Enter the first character of the name using the alphanumeric keys: press the key for the required character 1, 2 or 3 times, until the character appears, flashing, on the display.
- Use the TUNING up [60] and down [58] keys on the front panel to select the required character. Keep pressed for highspeed selection.
- Press the MEMO key [59]: the selected character lights continuously, and the next character space begins to flash.
- Repeat the procedure until the complete name is lit continuously.
- Press the MEMO key [59] for at least 1 second.

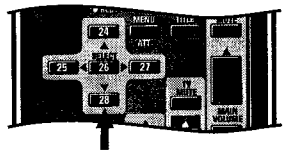
Clearing presets

- Select the preset you want to clear (see 'Selecting a preset station').
- Press the MEMO key [59]: on the receiver display, 'Memo' flashes for 5 seconds. During this time, press the 0 CLEAR key [51] until 'Clear' appears on the display.
- If you wish to clear all presets, you can press the COAX 2 [22] and CD keys [8] together for more than 3 seconds.

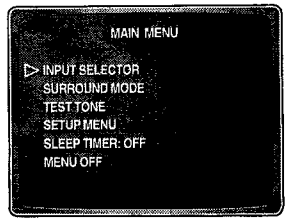
CAUTION
THIS, HOWEVER, WILL CLEAR THE ENTIRE MEMORY CONTENTS, INCLUDING THE VOLUME SETTING AND SURROUND SOUND MODE MEMORY, AND SET THE RECEIVER TO STANDBY.

Operation using the OSD

Main Menu
Call up the main menu by pressing any one of the OSD cursor movement keys [24] to [28].

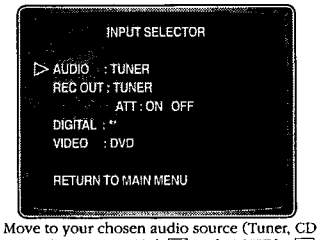


Move to a sub-menu as required with the OSD CURSOR UP ▲ [24] and DOWN ▼ [28] keys, then press SELECT [26].



Input Selector

(Input Selector Menu)



Audio: Move to your chosen audio source (Tuner, CD or Tape) with the OSD CURSOR LEFT ◀ [25] and RIGHT ▶ [27] keys, then press SELECT [26].

REC Out: If a digital source has been selected (see below) you can select an audio source for recording in the same way as for Audio. If no digital source has been selected, the same source is automatically selected for recording as for Audio.

Att On/Off: Too powerful an Audio/Video or Audio source signal can cause sound distortion even at low volume settings. To remedy such distortion, move to Att: On with the OSD CURSOR RIGHT ▶ [27] key and press SELECT [26].

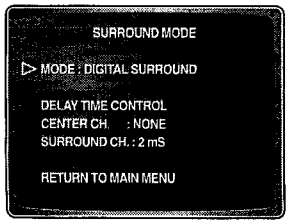
Digital: Move to your chosen digital source (COAXIAL 1, COAXIAL 2 or OPTICAL) with the OSD CURSOR LEFT ◀ [25] and RIGHT ▶ [27] keys, then press SELECT [26].

Video: Move to your chosen video source (DVD, TV/SAT, VCR, AUX 1, AUX 2) with the OSD CURSOR LEFT ◀ [25] and RIGHT ▶ [27] keys, then press SELECT [26]. On completion, move down to Return to Main Menu and press SELECT [26].

Surround Mode

(Surround Mode Menu)

Mode: Move to your chosen Surround Mode (DIGITAL, PRO LOGIC, 3-STEREO, MOVIE, HALL, MATRIX or STEREO) with the OSD CURSOR LEFT ◀ [25] and RIGHT ▶ [27] keys, then press SELECT [26].



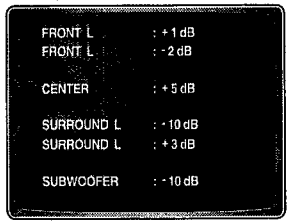
On completion, move down to Return to Main Menu and press SELECT [26].

NOTE

Delay time settings are described under Setup.

Speaker level adjustment

For adjustment during listening follow the next procedure. See "Speaker level calibration" in the setup section on page 11 for test tone based adjustment.



- Press CH.SEL [31] key, on the OSD the current adjustments appear.
- Adjust the level of the highlighted speaker with the CH.LEVEL Up [32] and Down [30] keys.
- Move to other channels by pressing the CH.SEL [31] key again.
- The OSD disappears after a timeout of 10 Seconds.

Setup Menu

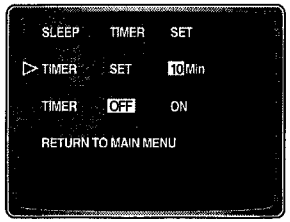
See "Setting up your home cinema system" in the Setup section at page 10.

Sleep Timer

(Sleep Timer Menu)

Timer Set: set the desired time (10 - 90 minutes) with the OSD CURSOR LEFT ◀ [25] or RIGHT ▶ [27] key, then press SELECT [26].

Timer Off/On: move to On or Off as desired with the OSD CURSOR LEFT ◀ [25] or RIGHT ▶ [27] key, then press SELECT [26].



Headphones

Conventional dynamic headphones can be plugged in here.

NOTE

When the headphones plug is inserted, the surround mode is switched automatically to STEREO and the sound from the speakers are muted. The surround mode returns to the previous mode as soon as the plug is removed from the jack.

Tone controls

- BASS control is used to boost or cut low frequencies for LEFT, RIGHT, CENTER and SUBWOOFER channel.
- TREBLE control is used to boost or cut high frequencies for LEFT, RIGHT, CENTER channel.

Balance control

- adjust the sound volume balance between LEFT and RIGHT frontspeakers and headphone channels.

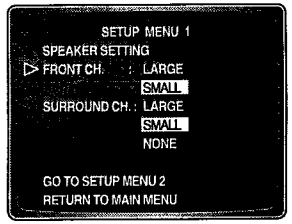
Setting up your Home Cinema system

In general, a large speaker is defined as a traditional full range speaker that includes a woofer and is capable of reproducing sounds below 100 Hz. For the purpose of this product, a small speaker is one that is not capable of delivering sounds below 100 Hz. Most satellite type speakers fall into this category.

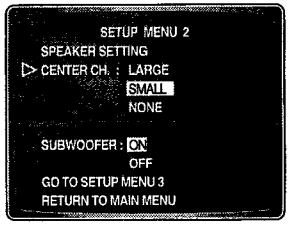
Matching the receiver to the speaker configuration

Before using your Home Cinema for the first time, set up your Receiver audio outputs and other functions to match the speakers you have connected. You do this by calling up the receiver's On-Screen Display on the TV.

- Call up the main menu by pressing any one of the OSD cursor movement keys [24] to [28]. The OSD's Main Menu appears on the TV.
- Move the cursor down to 'Setup Menu' by pressing the OSD DOWN ▼ [28] key, then press SELECT [26] to obtain Setup Menu 1.



- Using the OSD LEFT ◀ [25] and RIGHT ▶ [27] keys, move the cursor to Large if your front L/R speakers are full-frequency types, Small if they do not go down below 100 Hz, then press the OSD DOWN ▼ [28] key.
- Repeat the procedure for the Surround L/R speakers. if you are not using Surround speakers, set to None.
- Move the cursor down to 'Go to Setup Menu 2' by pressing the OSD DOWN ▼ [28] key, then press SELECT [26] to obtain Setup Menu 2.



- Move the cursor to Centre Channel Large, Small, or None as appropriate and press the OSD DOWN ▼ [28] key.
- Move the cursor using the same procedure to set Subwoofer On or Off as appropriate.

NOTE

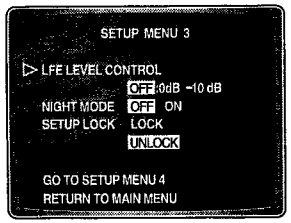
'Subwoofer' cannot be set off if the front speakers are set 'small'.

- Move the cursor down to Go to Setup Menu 3 and press SELECT [26].

- Set LFE (Low Frequency Effect) to Off, 0 dB or -10 dB to set your preferred bass response. If you have too loud low frequency sound with disortion, you can attenuate -10dB or mute the LFE signal. This setting is no relation for speaker setting. When "0dB" is selected, the FTD indicate "LFE". Press the OSD DOWN ▼ [28] key.
- If you want to listen to low-volume music from a digital source, as at night, set Night Mode to On (this function only operates if the digital source contains sound compression data) and press the OSD DOWN ▼ [28] key.
- Your Setup procedure is complete. If you like to prevent accidental changes move 'Setup lock' to lock.
- Move the cursor down to Return to Main Menu, and press SELECT [26].

NOTE

To change any set-up function, you must first go to Setup Menu 3 and select Setup Unlock.



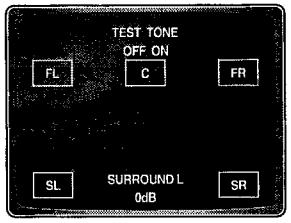
Speaker level calibration

Now that you have configured your amplifier to match your speaker configuration, you should calibrate the speaker levels:

- On the receiver front panel, ensure that the BASS [11], TREBLE [12] and BALANCE [13] controls are set to the centre position.
- Press the PRO LOGIC key [35].
- On the OSD Main Menu, move the cursor to Test Tone and press SELECT [26]. You will hear a test tone from the Front Left speaker. If necessary, adjust the tone to a clearly audible level with the master VOLUME control [20] on the receiver front panel.

NOTE

Press TEST Tone [35] to go directly to Test Tone menu.



- Press the CH SEL key [31]: the test tone moves over to the centre speaker. If necessary, adjust the tone to the same level as from the Front Left speaker by pressing the CH level UP ▲ [32] or DOWN ▼ [30] key.
- Repeat this procedure for the Front Right, Surround Left and Surround Right speakers in turn.
- Repeat the speaker cycle again until you are satisfied that all

NOTE

- Speakers not installed will of course not be tested.
- The test tone is not output to the subwoofer irrespective of ON or OFF selection.
- The volume levels of the speaker channels set above will be used in common for the DOLBY DIGITAL (AC-3), DOLBY PRO LOGIC and 3-STEREO surround modes.

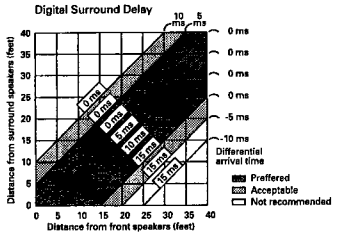
- Set the test tone to Off. (This takes you back to Main Menu)
- In the Main Menu, move the cursor to Menu Off and press SELECT [26]. The OSD disappears.

Delay times

The receiver is set to reproduce correctly synchronized Digital Surround sound in a listening area where the surround speakers are about 150 cm nearer to the listening position than the front speakers, and the centre speaker is in line with the front speakers. To adjust for other listening area arrangements, proceed as follows:

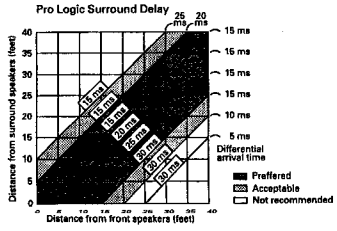
Digital Surround

- Measure the distances in centimetres from the front speaker plane and from the surround speaker plane to the listening position plane.
- Subtract the surround distance from the front distance and divide by 30. The result is the required Surround Channel delay time in milliseconds.
- If the centre speaker is on the front speaker plane, no centre delay is needed. If, however, it is nearer the listening position, measure the distance in centimetres between the front and centre speaker planes, and divide by 30. The result is the required Centre Channel delay time in milliseconds.



Pro Logic

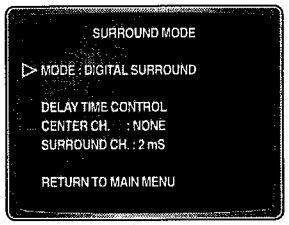
- Add 15 milliseconds to the Surround Channel delay time calculated for Digital Surround.
- If the centre channel in Digital Surround mode is set, to for example 5 ms, the centre channel in Pro Logic mode is automatically, shifted additionally 15 ms (to for example 20 ms).



Delay time settings

To set the the Digital Surround delay times:

- Press the SELECT button [26]: The OSD's Main Menu appears on the TV.
- Move the cursor to Surround Mode by pressing the OSD DOWN ▼ [28] or UP ▲ [24] key, then press SELECT [26]: the Surround Mode Menu appears.



- Select Digital Surround Mode.
- Press the cursor DOWN ▼ [28] key to move to Centre Channel, then select the required delay time with the cursor LEFT ◀ [25] and RIGHT ▶ [27] keys.
- Press the cursor DOWN ▼ [28] key to move to Surround Channel, then select the required delay time with the cursor LEFT ◀ [25] and RIGHT ▶ [27] keys.
- Press SELECT [26].
- Move the cursor to Return to Main Menu and press SELECT [26].

To set the Pro Logic delay time, repeat the above procedure, but select PRO LOGIC [13] instead of Digital Surround Mode.

Multisystem remote control

The multisystem remote control is pre-programmed at the factory to transmit RC5/6 remote control codes used by Philips and associated equipment. It can also 'learn' the remote control codes for equipment from other manufacturers.

Learning procedure

- Set the remote SLIDER SWITCH [C] to Learn.
- Press the SELECTOR keys [2] to [9] for the source to be programmed.
- On the multisystem remote control, press the key for the function to be learned: 'Learn' lights up. For a summary of learnable functions, refer to Table 3.

NOTE

If Learn flashes along with TX, the code cannot be learned, either because it is not compatible, or because the Learn memory is full.

- Take the remote control for the source and aim it at the receiver from a distance of about 20 cm, then press and hold the key of the function to be learned until 'Learn' flashes and then goes out.
- Repeat this procedure for all the codes to be learned.
- Set the remote control mode selector switch to User.

To 'unlearn' a code:

- Set the remote control mode selector switch to Learn.
- Simultaneously press the key which has learned a function and the Main Power Off key.
- Set the remote control mode selector switch to User.

To 'unlearn' all codes:

- Set the remote control mode selector switch to Learn.
- Simultaneously hold down the Main Power On and Off keys for at least 3 seconds. 'Learn' and 'TX' will flash, then go off.
- Set the remote control mode selector switch to User (or RC-5).

NOTE

Some keys can be learned dependent on the system selected e.g. digit keys and some keys can only be learned once (independent of the system) e.g. TV VOLUME UP.

Key Nr.	Name	TV	DVD	VCR	AUX 1	AUX 2	TUNER	CD	TAPE
1	Source Power	1	1	1	1	--	1	1	1
2	TV	0							
3	DVD	0							
4	VCR	0							
5	AUX 1	0							
6	AUX 2	0							
7	TUNER	0							
8	CD	0							
9	TAPE	0							
10	MAIN POWER off	0							
11	MAIN POWER on	0							
12	SLEEP	1							
13	PROLOGIC	1							
14	3-STEREO	1							
15	MOVIE	1							
16	DIGITAL	1							
17	MATRIX	1							
18	HALL	1							
19	STEREO	1							
20	OPTIcal	1							
21	COAX 1	1							
22	COAX 2	1							
23	NIGHT	1							
24	Cursor UP	1							
25	Cursor LEFT	1							
26	SELECT	1							
27	Cursor RIGHT	1							
28	Cursor DOWN	1							
29	TV MUTE	1							
30	OSD	1							
31	CH. SEL	1							
32	CH. LEVEL UP	1							
33	TV VOLUME UP	1							
34	DISPLAY	1							
35	TEST	1							
36	CH. LEVEL DOWN	1							
37	TV VOLUME DOWN	1							
38	MUTE	1							
39	VOLUME UP	1							
40	VOLUME DOWN	1							
41	1	1	1	1	1	--	1	1	1
42	2	1	1	1	1	--	1	1	1
43	3	1	1	1	1	--	1	1	1
44	4	1	1	1	1	--	1	1	1
45	5	1	1	1	1	--	1	1	1
46	6	1	1	1	1	--	1	1	1
47	7	1	1	1	1	--	1	1	1
48	8	1	1	1	1	--	1	1	1
49	9	1	1	1	1	--	1	1	1
50	MEMO	1	1	1	1	--	1	1	1
51	0 CLEAR	1	1	1	1	--	1	1	1
52	A. CH / P. SCAN	1	1	1	1	--	1	1	1
53	AUDIO	1	1	1	1	--	1	1	1
54	PREVIOUS / CH-	1	1	1	1	--	1	1	1
55	PAUSE HIGHLIGHT UP	--	1	1	1	--	1	1	1
56	NEXT / CH+	1	1	1	1	--	1	1	1
57	SUBTitle	--	1	--	--	--	--	--	--
58	Search Backward HIGHLIGHT LEFT	1	1	1	1	--	1	1	1
59	OK	--	1	--	--	--	--	--	--
60	Search Forward HIGHLIGHT RIGHT	1	1	1	1	--	1	1	1
61	ANGLE	0	1	1	0	0	0	0	1
62	STOP	--	1	1	1	--	1	1	1
63	HIGHLIGHT DOWN	--	1	--	--	--	--	--	--
64	PLAY	--	1	1	1	--	1	1	1
65	MENU	--	1	--	--	--	--	--	--
66	TITLE	--	1	--	--	--	--	--	--

0 : Not learnable.
1 : Learnable.
--: No output before learning.

Table 3: Learnable functions

BEFORE REQUESTING SERVICE

If it appears that the receiver is faulty, first consult this checklist.
It may be that something simple has been overlooked.
Under no circumstances attempt to repair the receiver yourself: this will invalidate the Warranty.

Look for specific symptom(s). The perform only the actions listed to remedy the specific symptom(s).

	SYMPTOM	CAUSE	SOLUTION
Trouble occuring regardless of sources, i.e. during CD play-back, tape playback and FM reception, etc.	The display lights but no sound or picture is produced.	• The input/output cord connections are incomplete. • The MUTING switch is ON. • The position of the function selector is not correct. • The VOLUME control is turned down all the way.	• Make sure all connections are made securely. • Press the MUTING button to turn it off. • Press the function selector of the desired source. • Turn the control to an appropriate level.
	Sound is output only from the left or right channel.	• The input/output cord connections are incomplete. • The left/right balance is off-center.	• Make sure all connections are made securely. • Adjust the CH. LEVEL control correctly.
Trouble occuring during surround playback.	No sound is produced from the surround speakers.	• The surround mode is STEREO or 3-STEREO. • The input signal is monaural. • A headphone is inserted.	• Select a mode other than STEREO or 3-STEREO. • The surround channel signal is not output from monaural signals. • Remove the headphone to fully enjoy Surround Sound.
	No sound is produced from the center speaker.	• The surround mode is other than DOLBY PRO LOGIC SURROUND, 3-STEREO or MOVIE SURROUND. • The center mode is 'NONE' position.	• Select one of the DOLBY or MOVIE modes. • Select SMALL or LARGE.
Trouble in On Screen Display.	On-screen display does not display stable on the screen.	• The OSD System is not in the correct TV System.	• See 'Changing the TV broadcast standard setting' on page 6.
Trouble related to remote control unit.	Remote control operation is not normal.	• The batteries are exhausted. • The remote control unit is operated too far away from the main unit.	• Replace both batteries with new ones. • Operate the remote control unit at a closer distance to the main unit.

General malfunction

If the equipment malfunctions, this may be because an electrostatic discharge or AC line interference has corrupted the information in the equipment memory circuits.
Therefore:
- Disconnect the plug from the AC line supply.
- After waiting at least three minutes, reconnect the plug to the AC line supply.
- Re-attempt to operate the equipment.

How to reset the unit

Should the operation or display seem to be abnormal, reset the unit with the following procedure:
turn the main unit on and press and hold the MEMO and CLEAR buttons simultaneously for more than 3 seconds.
Remember that the procedure will reset the settings of the function selector, Surround mode, delay time, TUNER PRESET etc., to their initial settings.

Memory backup
- In case a power outage occurs or the power cord is accidentally unplugged, the FR980 is equipped with a backup function to prevent memory data such as the preset memory from being erased. The memory functions are backed up for up to about one week.

TECHNICAL SPECIFICATIONS FR980

GENERAL FUNCTIONALITY

MPEG2 multichannel decoding (5.1)	
Dolby Digital (AC-3) decoding (5.1)	
3x Digital input, 1x optical + 2x coaxial	
Dolby Pro Logic decoding by DSP	
Output 5 x 120W Music Power	
3 mode OSD; PAL, NTSC and Secam	
System remote capability	
Learnable remote control	
AM/FM 30 random preset tuner	
RDS capabilities	
Auto preset memory, preset scan	
Pre-out terminals	

FM TUNER SECTION

Frequency range	87.5 - 108.0 Mhz
Usable sensitivity	1.3 µV /13.5 dBf
S/N mono/stereo	76 dB / 68 dB
THD mono/stereo	0.2 % / 0.5%
Stereo separation, 1 kHz	40 dB
ACS, ± 300 kHz	60 dB
Image rejection, 98 Mhz	70 dB
Output level, 1 kHz ±40 kHz	800 mV

AM TUNER SECTION

Frequency range	531 - 1602 kHz
Usable sensitivity	500 µV
S/N	50 dB
THD, 1 kHz at 30% mod.	0.5 %
Selectivity, ± 9 kHz	25 dB

AUDIO SECTION

Power out stages	
Front L / R, 20 -20 kHz, 8Ω	60W x 2
Center, 20 -20 kHz, 8Ω	60W x 1
Surround, 40 - 20 kHz, 8Ω	60W x 2
THD front	0.05 %
Input sens./imp.	220 mV /50 kW
L/R Channel crosstalk, 1 kHz	80 dB
Frequency response, -2 dB	10 -50 kHz
S/N	85 dB
Dolby channel sep. L/C/R/S	55 dB
MPEG2 channel sep L/C/R/S	55 dB
Delay time AC-3:	0 -15 mSec
MPEG2:	0 -15 mSec
Pro Logic:	15-30 mSec
Others:	40-90 mSec

VIDEO SECTION

Input level/imp. on comp.	1.0 Vpp/ 75Ω
Output level/imp. on comp.	1.0 Vpp/ 75Ω
Frequency response, -1 dB	10 - 8 Mhz
S/N	55 dB
Crosstalk	50 dB

CABINET / DIMENSIONS

Overall 439 x 158 x 458 mm (wxhxd) (include feet)
Weight 13 kg

FRONT PANEL

LED Standby
FTD-Display
Tuning frequency
Band
Memory
Auto
Stereo
Signal
Station name
Preset number
DSP mode
Multi channel mode
Night light
Delay time
Test tone indicator
Sleep mode
Volume level
Source indicator
Mute
Front controls
Power On/Off
Sources selection, 3x audio, 5x video
Digital input selector 3x
Night On/Off
Volume control
Bass control
Treble control
Balance
Pre-Set up/down
Tuning up/down
Front inputs
Headphone 6.3 mm
AUX 2 A/V in, 3 x cinch

REAR PANEL

Antenna terminal	1 x 2 screw (AM, Ground) 1 x 75Ω, FM
AM Tuning switch	9 kHz/10 kHz
Audio input	6 x pair cinch, CD, TAPE, TV, DVD, VCR, AUX1
Audio output	2 x pair cinch, TAPE, VCR
Video input	4 x cinch, TV, DVD, VCR, AUX 1
Video output	2 x cinch, TV, VCR
Digital input (AC-3, MPEG2, PCM)	1 x optical 2 x coaxial
Pre-amplifier out	6 x cinch, front L/R, center, surround L/R and sub-woofer
Speaker terminals	5 x pair screw, front L/R, center, surround L/R
RC 5-6	2 x cinch, in, out
AC input	2 pin CE type, fixed
Voltage selector	Rotary, 110V, 115V, 220V, 230V
Fuse holder	yes

ACCESSORIES SUPPLIED

Remote control	RC 980 + batteries, 2 x AAA
FM feeder antenna	1 x ribbon type
AM loop antenna	1 x
Fuse	1 x 110V/115V (T6,3A)

PCS 98 386

WARNING & SAFETY

(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wristband with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

ESD

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB) AVAILABLE ESD PROTECTION EQUIPMENT :

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1M)		4822 320 11307
extendible cable (2m, 2M , to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2M , to connect table mat to connection box)		4822 320 11306
earth cable (1M , to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

AVAILABLE JIG for FR980

Extension PCB and wire kit	4822 395 10815

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ⚠

(F)

Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

SAFETY

(D)

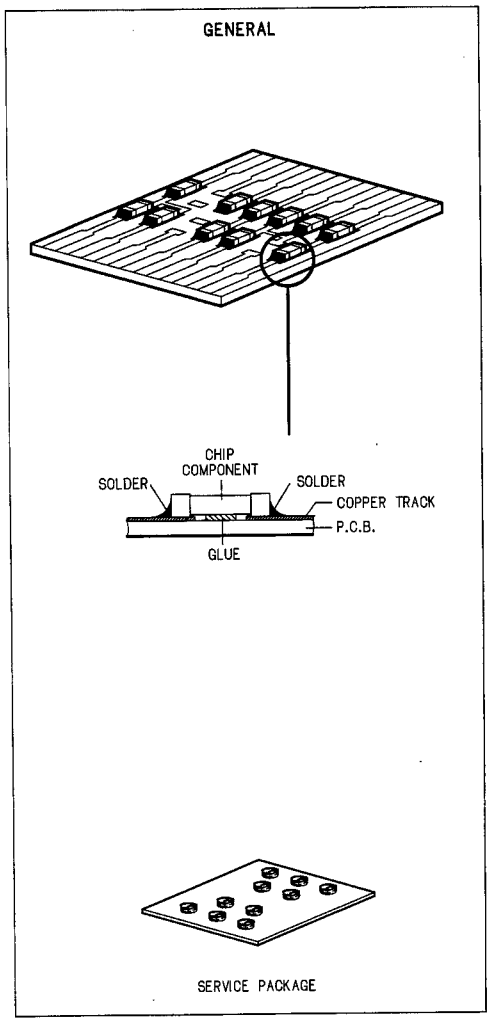
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

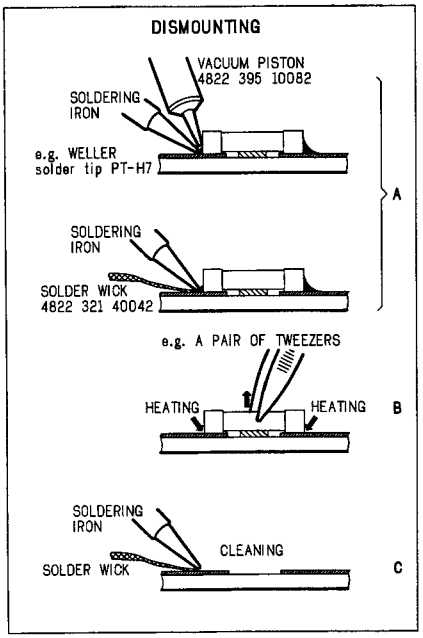
(NL)

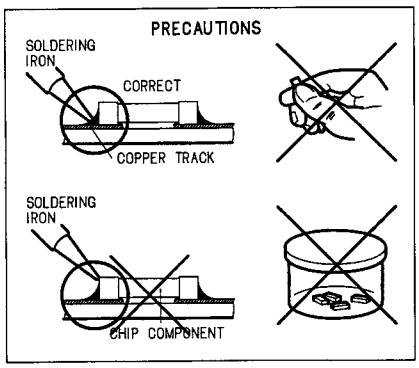
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkeliijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

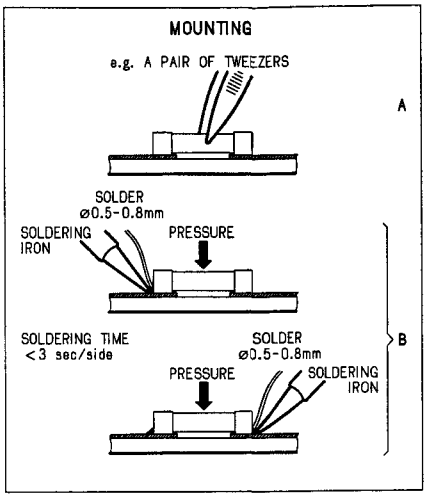
(I)

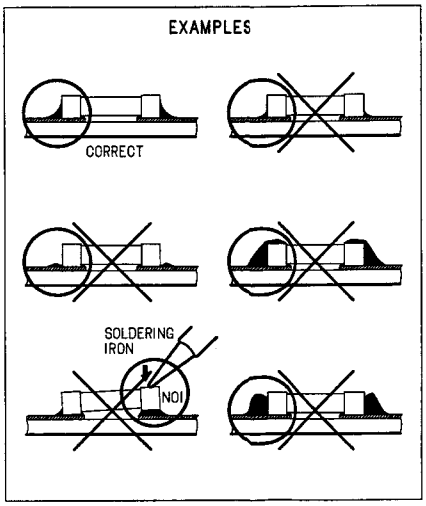
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠


GENERAL
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON 4822 395 10082
SOLDERING IRON
e.g. WELLER solder tip PT-H7
A
SOLDERING IRON
SOLDER WICK 4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
SOLDER WICK
CLEANING
C


PRECAUTIONS
SOLDERING IRON
CORRECT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER ø0.5-0.8mm
SOLDERING IRON
PRESSURE
SOLDERING TIME <3 sec/side
SOLDER ø0.5-0.8mm
PRESSURE
SOLDERING IRON
B


EXAMPLES
CORRECT
SOLDERING IRON
NO!

SERVICE PROGRAM

1. Tracking point memory

This service procedure can be used for measurement of the tuner circuit.
When the POWER ON, press the **"PRESET UP"** button while pressing the **"COAX2"** button for at least 3 seconds or more. FLD will display **"TRACKING"**. Frequencies will be memorized as follows.

	P1	P2	P3	P4
FM	90.0	98.0	106.0	87.5

	SCAN STEP	P5	P6	P7	P8	P9	P10	P11	P12~ P30
AM	10 KHz	600.0	1000.0	1400.0	520.0	←	←	←	←
	9 KHz	603.0	999.0	1404.0	531.0	←	←	←	←

2. FLD segment luminous

This service procedure will illuminate all segments by the following steps :
With the POWER ON, press the **"FM/AM(TUNER)"** button while pressing the **"COAX2"** button for at least 3 seconds or more. This procedure takes 1 minute and 40 seconds to finish; at this point the procedure is complete.

1. All segments will be illuminated for 5 seconds.
2. At the grid "1G", segments are illuminated the following order :

① kHz → ② MHz → ③ ATT → ④ LFE → ⑤ NIGHT → ⑥ MULTI → ⑦ COAX → ⑧ OPT →
⑨ RF → ⑩ TA → ⑪ COPY → ⑫ VCR1 → ⑬ SLEEP → ⑭ SLEEP → ⑮ P - SCAN → ⑯ DISP

3. At the grid "2G" to "11G", each segment is illuminated individually.
4. At the grid "12G", segments are illuminated in the following order :

① VISUAL → ② SIGNAL BAR (LEFT SIDE) → ③ SIGNAL BAR (2nd LEFT) → ④ SIGNAL BAR (CENTER) →
⑤ SIGNAL BAR (2nd RIGHT) → ⑥ SIGNAL BAR (RIGHT SIDE) → ⑦ AC-3 → ⑧ PCM → ⑨ DIGITAL →
⑩ PRO - LOGIC → ⑪ 3 - STEREO → ⑫ MOVIE → ⑬ MATRIX → ⑭ HALL → ⑮ THX CINEMA → ⑯ STEREO

3. Selector check mode

This service program automatically operates input selector and surround mode by the following procedure.
This service program continually repeats until power is shut off.
When the POWER ON, press the **"COAX2"** button while pressing the **"TAPE"** button 3 seconds or more.

STEP	INPUT SELECTOR	DSP MODE	FM MODE	NOTES
1	FM	STEREO	AUTO	98.0MHz
2	LAST BAND		MONO	LAST
3	AM (MW)	STEREO		999kHz
4	CD	P-LOGIC		
5	COAX1	AC-3		
6	TAPE	MOVIE		
7	COAX2	P-LOGIC		
8	TV	3STEREO		
9	OPT	MPEG		
10	DVD	MATRIX		
11	VCR	HALL		
12	AUX1	STEREO		
13	AUX2	P-LOGIC		

4. All clear

This service program can clear all memorized operations and functions.
When the POWER ON, press the **"CD"** button while pressing the **"COAX3"** button 3 seconds or more. FLD shows **"CLEAR MEMO"** and power will be OFF.

5. Volume reset

This service program can be reset "MASTER VOLUME LEVEL" and "CHANNEL OUTPUT LEVEL" to initial level. (MASTER VOLUME : -64dB, CHANNEL LEVEL : 0dB)
When the POWER ON, transmit the reset code **"163731"** continually more than 3 seconds by remote control unit . FLD shows **"VOL RST"** .

TEST EQUIPMENT REQUIRED

1) AM/FM Signal Generator
2) Video Signal Generator
3) Digital Multimeter
4) Distortion level meter

ALIGNMENT PROCEDURES

1. Main amp idling current adjustment

1) With the power OFF, set semi - fixed resistor R743 (Lch), R744 (Rch), R786 (Center ch) on the PC board (P704) to the center position.
2) Connect a digital voltmeter, set for the DC range, on the emitter resistor [R759 (Lch), R760 (Rch), R794 (Center ch)] on the PC board (P704).
3) After the above,adjust the idling current as follows:
   Turn the power ON and adjust semi-fixed resistor R743 (Lch), R744 (Rch), R786 (Center ch) while observing the digital multimeter indication.
   The target value is 7.2 mV (20 mA).

All values are with no load on speaker terminals, volume set to minimum and no input with the unit switchedto the CD position. Always allow the amplifier to stabilize for 10 minutes or longer prior to adjusting idle current.

2. Main amp DC offset adjustment

1) With the power OFF, connect a digital voltmeter, set for the DC range, to the speaker terminal.
2) After the above, adjust the DC offset as follows:
   Turn the power ON and adjust RN63 (Lch), RN64 (Rch), RN70 (Center ch) so that the output is ±20 mV.

3. AM IF Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	999 kHz	Level 300 µV/m (50dB/m) Mod. 400 Hz 30%	Tuning point	LA06	Output level (L or R) **Maximum** at TAPE-OUT

This adjustment is normally not necessary, because the coil LA06 is preset by the original supplier.

4. AM Tracking Adjustment

Step	**Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	603 kHz	Level 300 - 400 µV/m Mod. 400 Hz 30%	603 kHz	LA01	Output level (L or R) **Maximum** at TAPE-OUT
2		1404 kHz	Level 300 - 400 µV/m Mod. 400 Hz 30%	1404 kHz	CA01	Output level (L or R) **Maximum** at TAPE-OUT
3	Repeat step 1 and 2 until sensitivity be maximized.					

5. AM auto stop Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	999 kHz	500 μV/m (54 dB/m)	999 kHz	RA11	**"TUNED"** indicate on FLD
2			1000 μV/m (60 dB/m)	AUTO SCAN	Only Confirm	**"TUNED"** indicate on FLD

REMARK: This adjustment is related to the FM muting Level Adjustment. The FM muting Level re-adjustment is necessary after this adjustment.

6. FM MONO. Distortion Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	500 μV (54 dB) MONO 1 kHz / Dev.40kHz 53.3%	98 MHz (P2)	L201	Distortion level **Minimum** at TAPE-OUT

7. FM Muting Level Adjustment

Turn the variable resistor **R212** and stop at position **"TUNED"** is not shown (not indicated), then again turn the variable resistor **R212** to the opposite revolution and stop at a position **"TUNED"** is shown.

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	6.3 μV (16 dB) MONO 1 kHz / Dev.40kHz 53.3% MONO 1kHz / Dev. 75kHz 100%	98 MHz (P2)	R212	**"TUNED"** indicate on FLD
2			Over mentioned level **+3 dB**	AUTO SCAN	Only Confirm	**"TUNED"** indicate on FLD

8. FM STEREO Distortion Adjustment

Adjust the **L channel** with the RF signal modulated only **L channel** first and confirm the **R channel** with the RF signal modulated only **R channel**.

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	500 μV (54 dB) L or R 1kHz / Dev. 40kHz 53.3% PILOT 19kHz / Dev. 6kHz 8%	98 MHz (P2)	IF COIL in FRONT END	Distortion level **Minimum** at TAPE-OUT
2					R218	Distortion level **Minimum** at TAPE-OUT

REMARK: Adjustment with **R128** is not necessary when the distortion level is less than 0.5% with adjusting IF coil.

9. FM STEREO Separation Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	same specification as **FM STEREO distortion adjustment.** Input only **L** channel.	98 MHz (P2)	R211	Output level **Minimum** at TAPE-OUT channel **R**
2		98 MHz	same specification as **FM STEREO distortion adjustment.** Input only **R** channel.	98 MHz (P2)	R211	Output level **Similar** as Rch at TAPE-OUT channel **L**

10. FM RDS Clock Level Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	RDS Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	RDS Signal only Dev. 1KHz 1.3%	98 MHz (P2)	R906	**Maximum** at **U218** (Jumper lead)
2	RDS Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	RDS Signal only Dev. 2KHz 1.3%	98 MHz (P2)	Only Confirm	Station name indicate on FLD

REMARK: Other adjustments of FM section have to be done before this adjustment.

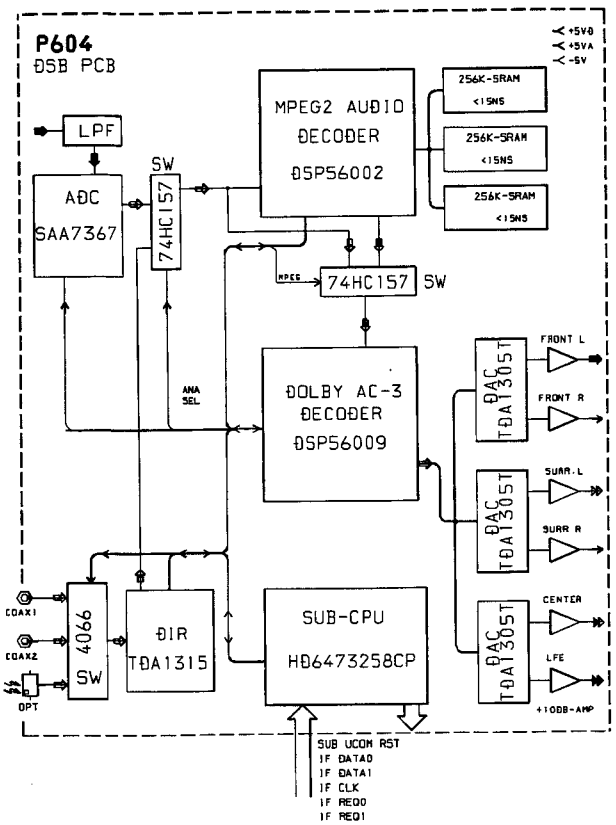
11. On Screen Display VCO Adjustment

Step	Input Signal Source and Connection	Measuring position	Measuring equipment	Input selector	Adjustment Point	Adjustment Value
1	Color bar or other standard video signal. Video signal generator output to LD video input.	IC QX60 26pin and GND.	DC voltmeter (Impedance > 10k Ω/V)	LD	CX67	2.5V ±0.1V

REMARK: Connect the TV monitor to the monitor output terminal of the product.

MPEG DECODER MODULE

I/O Block Diagram



I/O Pins

DIGITAL INPUT
JM01 : COAX1 digital IN - CINCH
JR01 : COAX2 digital IN - CINCH
JR02 : Optical digital IN - TOS Link

MAIN CPU connector (J651) Interface for Main CPU

IFREQ	: bidir
+5VD	: output
IFACK	: bidir
IFDATA - I	: input
IFDATA - O	: output
IFCLK	: output

AUDIO I/O and Supply connector

-5V	: supply
GND	: ground
RESET	: reset to sub CPU
RT	: analog input to ADC
+5VD	: supply
+5VA	: supply
LT	: analog input to ADC
MUTE	: control output
R	: analog output
L	: analog output
RS	: analog output
LS	: analog output
C	: analog output
LFE	: analog output

SHORT DESCRIPTION

The Hitachi sub-CPU (Q691) communicates with the MAIN CPU (QU01) of the FR980 via the SPI bus.
Modes and user settings are received ; status is reported back.
The Q691 is connected to the DSP56002 (Q601) via its parallel host interface and to the DSP56009 (Q631) via the serial host interface (configured as 12C slave.)
The Q691 downloads the DSP code of the 56002 via the parallell host interface, and the code for the 56009 via the 12C interface. DSP code is stored in the internal ROM of the Q691.
The Q691 will set the modes and parameters of the DSP programs and will monitor the status of the DSP programs.
The Q691 directly controls the audio components which are **DIR** (QR02), **ADC** (QK01), **DAC** (QD01, QD31, QD51) and other devices.

MPEG-2 / AC-3 Decoding

Source : Digital Input (Coaxl, Coax2, OPT)
Out : max. 5.1ch (L, R, C, LFE, LS, RS)
MPEG : The Q601 decodes MPEG bitstream and output the decoded signal to Q631.
The Q631 divides signal and delay the Center and Surround signals.

AC-3 : The 56009 directly gets bitstream from QR02, and decodes the signal.

PCM / Pro Logic, 3 Stereo, Movie, Hall, Matrix, Stereo Decoding.

Source : Digital Input (Coaxl, Coax2, OPT)
Out : max. 4ch (L, R, C, LS, RS)
The Q631 directly gets audio data from QR02, and reproduces the each decoded signals.

MPEG-2 / AC-3 / PCM Detection

The Q601 will detect whether the received data is MPEG-2 or AC-3.
The QR02 will detects whether the received SPDIF is PCM-audio or Not.
The MAIN CPU of the FR980 will automatically switch the DSP module in the correct mode.

Analog / Pro Logic, 3 Stereo, Movie, Hall, Matrix, Decoding.

Source : Analog input (Lt / Rt) A/ /D converted by QK01
Out : max. 4ch (L, R, C, LS, RS)
The Q631 directly gets audio data from QK01, and reproduces the each decoded signals.

Sleep Mode (at Analog Stereo mode)

All components will be set to a low power / standby mode when usefull.
This mode is activated when the user select stereo mode when an analog source is selected; so no digital processing is required.

Test Tone

Out : Test Tone Noise : L, C, R, Rsur, Lsur, LFE
Noise should be at all outputs simultaneously.
This mode is activated in the installation procedure. Noise is generated on all speakers so that volume adjustments can be made to match the speaker positions in the users liveing room.

Factory / Service test mode

Source : Digital Input (Coax1, Coax2, OPT - PCM)
Out : L, R, C, LFE, Ls, Rs

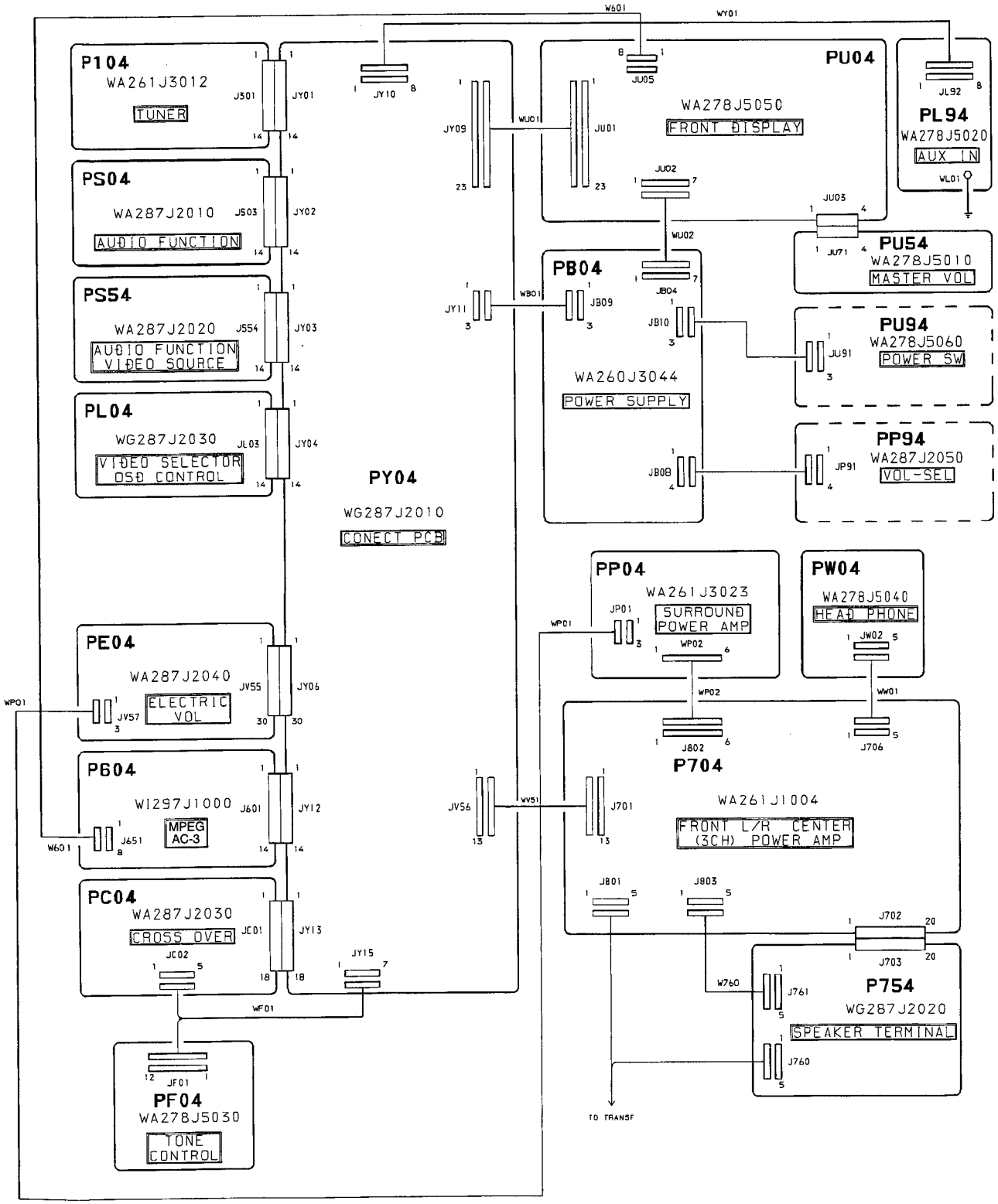
This mode puts the DSP module in through mode and feeds :

- L input to L, Ls and C
- R input to R, Rs, LFE

KEY COMPONENTS

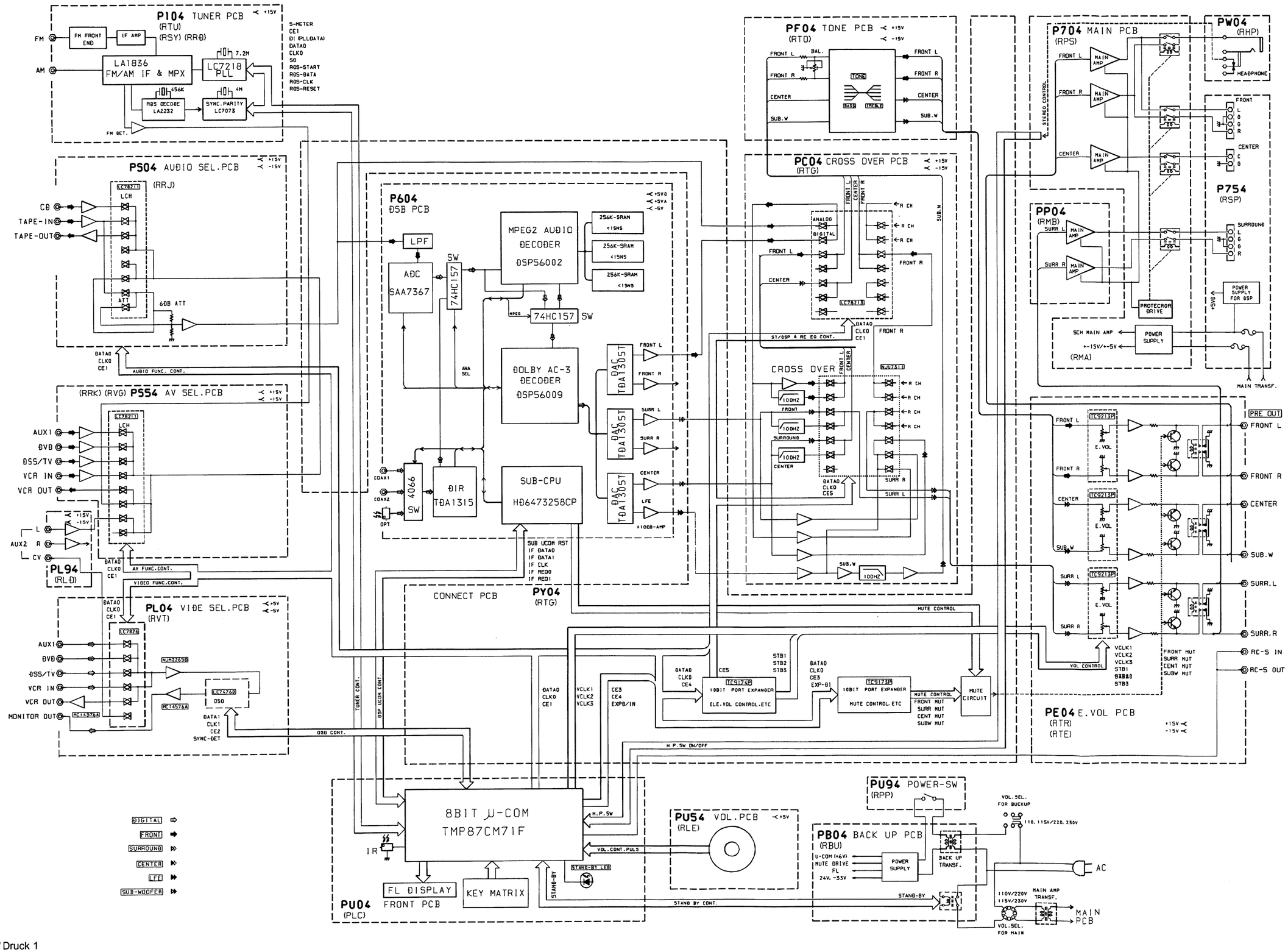
Q601 : DSP56002PV66 - Motorola - (MPEG2 5.1 ch processor) FQFP
Q631 : DSP56009FJ81 - Motorola - (AC-3, Dolby Pro Logic, Delay Line, LPCM processor) QFP80
Q602-604 : N342356SJ -15 - NKK (32kx8bit, 15 ns SRAM, SOJ28)
Q691 : HD6473257CP10 - Hitachi - (60k byte ROM Micro Controller)
QR02 : TDA1315H - Philips - (Digital input receiver)
QD01 : TDA1305T - Philips - (BCC-DAC) for L, R ch
QD31 : TDA1305T - Philips - (BCC-DAC) for LS, RS ch
QD51 : TDA1305T - Philips - (BCC-DAC) for C, LFE ch
QK01 : SAA7367T - Philips - (Bitstream-ADC)

WIRING DIAGRAM



3-2

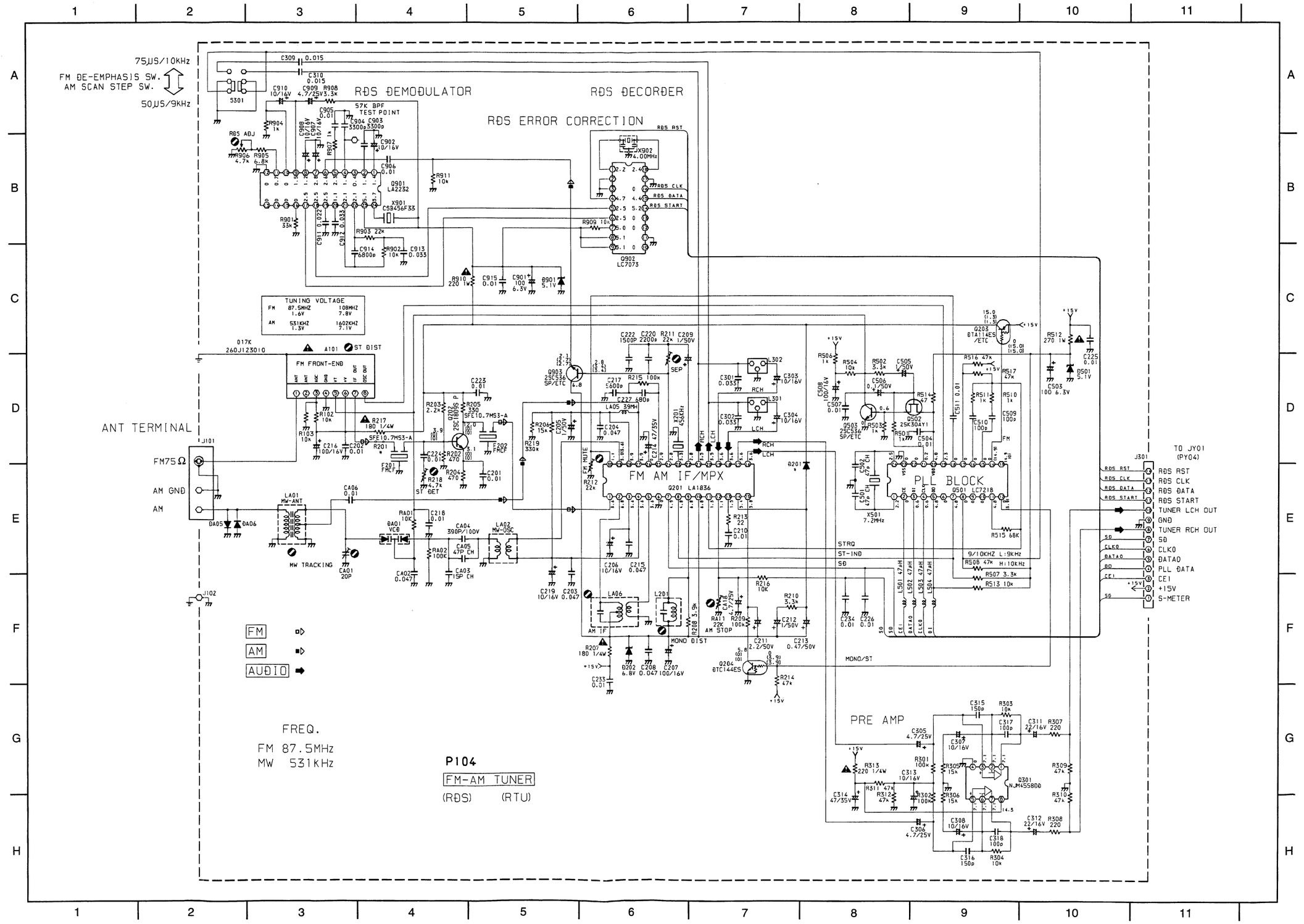
BLOCK DIAGRAM



CIRCUIT DIAGRAM

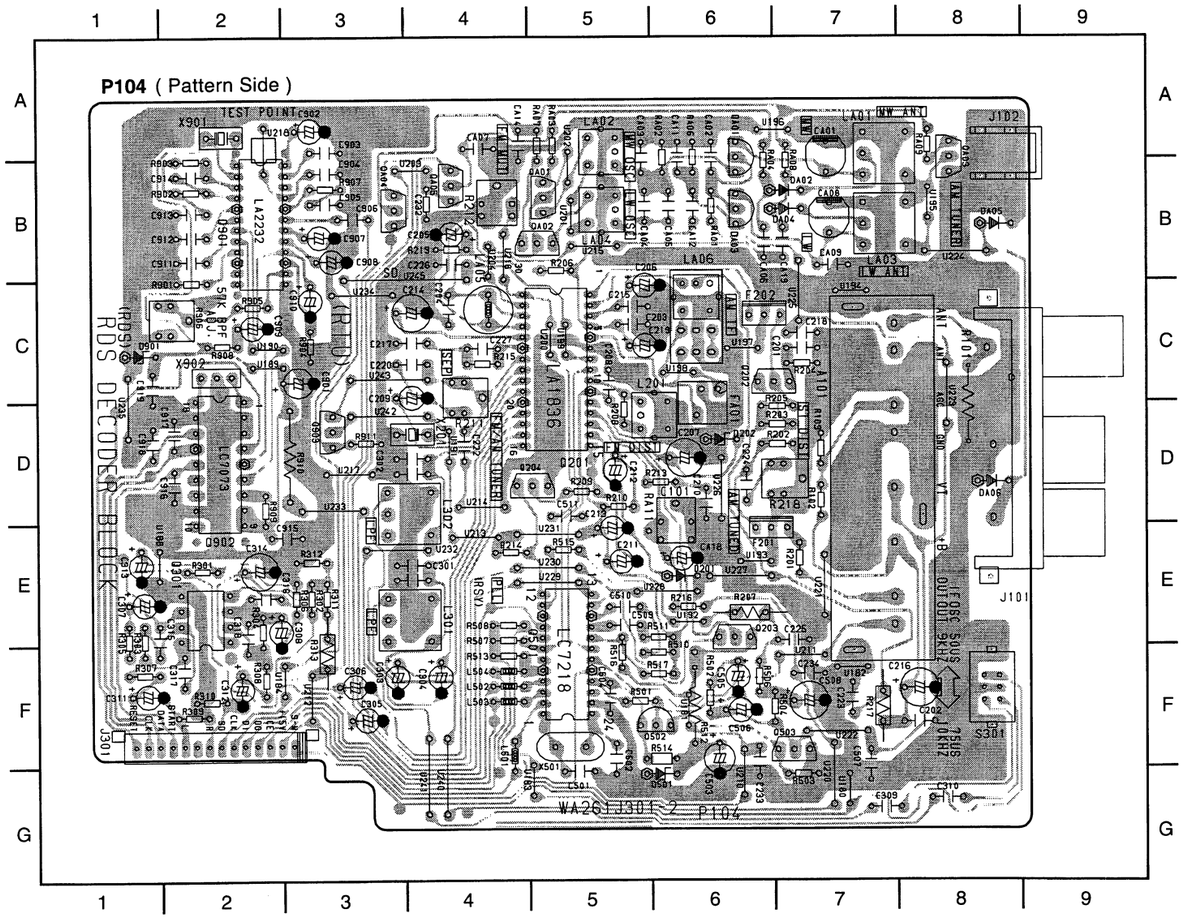
4-1

A101	D3	C203	F5	C213	F8	C224	D4	C305	G9	C315	G9	C507	D8	C906	B4	DA01	E4	J102	F2	L502	F9	Q503	D8	R203	D4	R213	E7	R304	H9	R501	D8	R513	F9	R906	B2	X902	B6
CA01	E3	C204	D6	C214	D6	C225	D10	C306	H9	C316	H9	C508	D8	C907	B3	DA05	E2	J301	D11	L503	F9	Q901	B4	R204	E4	R214	F7	R305	G9	R502	D8	R514	F9	R907	B3		
CA02	E4	C205	D5	C215	E6	C226	F8	C307	G9	C317	G9	C509	D9	C908	B3	DA06	E2	LA01	E3	L504	F9	Q902	C6	R205	D4	R215	D6	R306	H9	R503	D8	R515	E9	R908	A3		
CA03	E4	C206	E6	C216	D3	C227	D6	C308	H9	C318	H9	C510	D9	C909	A3	D201	E7	LA02	E5	Q201	E6	Q903	D5	R206	D5	R216	F7	R307	G10	R504	D8	R516	D9	R909	B6		
CA04	E4	C207	F6	C217	D6	C233	F6	C309	A3	C501	E8	C511	D9	C910	A3	D202	F6	LA05	D6	Q202	D4	RA01	E4	R207	F6	R217	D4	R308	H10	R506	D8	R517	D9	R910	C4		
CA05	E4	C208	F6	C218	E4	C234	F8	C310	A3	C502	E8	C901	C5	C911	B3	D501	D10	LA06	F6	Q203	C9	RA02	E4	R208	F7	R218	E4	R309	G10	R507	F9	R901	B3	R911	B4		
CA06	E3	C209	C6	C219	F5	C301	D7	C311	G10	C503	D10	C902	B4	C912	B3	D901	C5	L201	F6	Q204	F7	RA11	F7	R209	F7	R219	D5	R310	H10	R508	E9	R902	C4	S301	A2		
CA18	F7	C210	E7	C220	C6	C302	D7	C312	H10	C504	D9	C903	A4	C913	C4	F201	E4	L301	D7	Q301	G9	R102	D3	R210	F7	R301	G9	R311	G8	R510	D9	R903	B4	X201	D6		
C201	E5	C211	F7	C222	C6	C303	D7	C313	H9	C505	D8	C904	A3	C914	C4	F202	D5	L302	D7	Q501	E9	R103	D3	R211	C6	R302	H9	R312	H8	R511	D9	R904	A3	X501	E8		
C202	D3	C212	F7	C223	D5	C304	D7	C314	H8	C506	D8	C905	A3	C915	C5	J101	D2	L501	F8	Q502	D9	R202	D4	R212	E6	R303	G9	R313	G8	R512	C10	R905	B3	X901	B4		

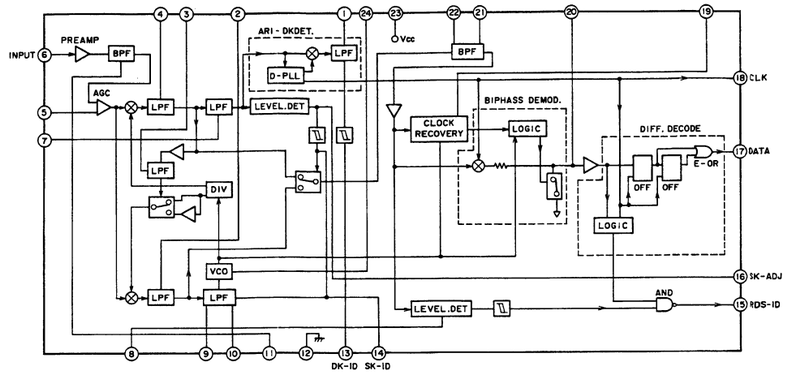


PRINTED CIRCUIT BOARD

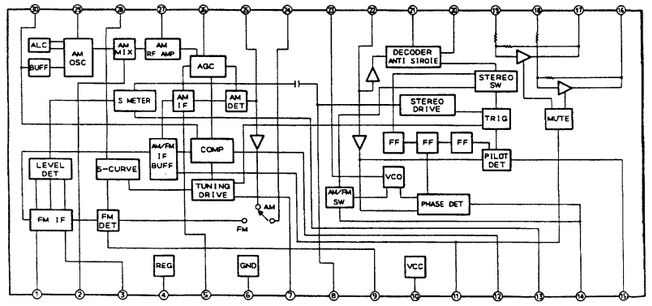
A101	C7	C207	D6	C223	F7	C308	E3	C504	F5	C907	B3	D501	G6	L501	F4	Q903	D3	R210	D5	R305	E1	R507	E4	R905	C2
CA01	A7	C208	C5	C224	D6	C309	G7	C505	F6	C908	B3	D901	C1	L502	F4	RA01	B6	R211	D4	R306	E3	R508	E4	R906	C2
CA02	A6	C209	C3	C225	E7	C310	G8	C506	F6	C909	C2	F201	E6	L503	F4	RA02	A6	R212	B4	R307	F1	R510	F6	R907	B3
CA03	A5	C210	D6	C226	B4	C311	F1	C507	F7	C910	C3	F202	C6	L504	F4	RA11	D6	R213	D6	R308	F3	R511	E6	R908	C2
CA04	B5	C211	E5	C227	C4	C312	F2	C508	E5	C911	B2	J101	E8	Q201	D5	R102	D7	R214	E4	R309	F3	R512	E6	R909	D2
CA05	B6	C212	D5	C233	G6	C313	E1	C509	A3	C912	B2	J102	A8	Q202	C6	R103	D7	R215	C4	R310	F3	R513	F4	R910	D3
CA06	B6	C213	D5	C234	F7	C314	E2	C510	E5	C913	B2	J301	F1	Q203	E6	R202	D6	R216	E6	R311	E3	R514	F6	R911	D3
CA18	E6	C214	C4	C301	E4	C315	E2	C511	D5	C914	B2	LA01	A7	Q204	D4	R203	C7	R217	F7	R312	E3	R515	E5	S301	F8
C201	C7	C216	F8	C302	D3	C316	E2	C901	C3	C915	E3	LA02	A5	Q301	E2	R204	D5	R218	D7	R313	F3	R516	F5	X201	D4
C202	F8	C217	C3	C303	F3	C317	F2	C902	A3	DA01	A6	LA05	C4	Q501	E5	R205	D6	R219	B4	R501	F5	R517	F6	X501	F5
C203	C6	C218	C7	C304	F4	C318	E2	C903	A3	DA05	B8	LA06	B6	Q502	F5	R206	B5	R301	E2	R502	F6	R901	C2	X901	A2
C204	C4	C219	C6	C305	F3	C501	G5	C904	B3	DA06	D8	L201	C5	Q503	F7	R207	E6	R302	E3	R503	G7	R902	B2	X902	C2
C205	B4	C220	C3	C306	F3	C502	F5	C905	B3	D201	E6	L301	E4	Q901	B2	R208	D5	R303	E1	R504	F7	R903	B2		
C206	B5	C222	D4	C307	E1	C503	G6	C906	B3	D202	D6	L302	D4	Q902	D2	R209	D5	R304	E2	R506	F6	R904	C3		



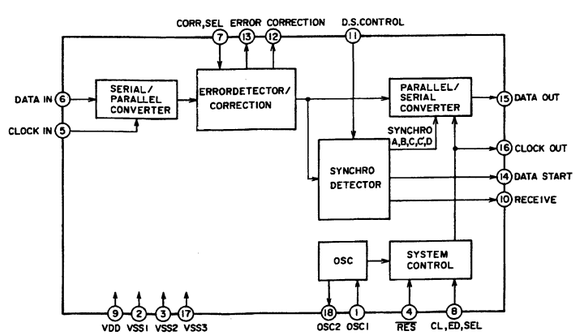
Q901 : LA2232



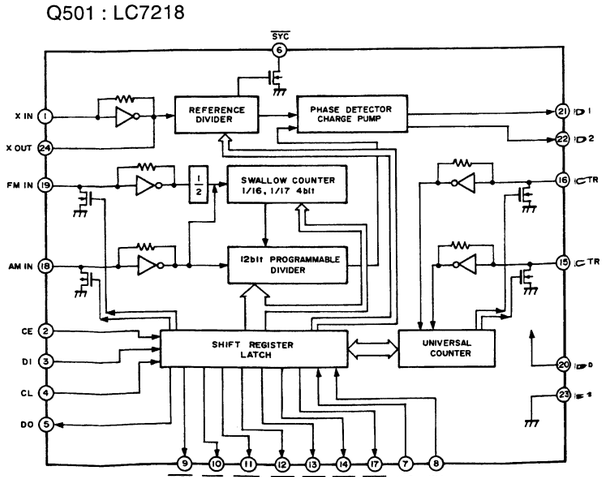
Q201 : LC1836



Q902 : LC7073



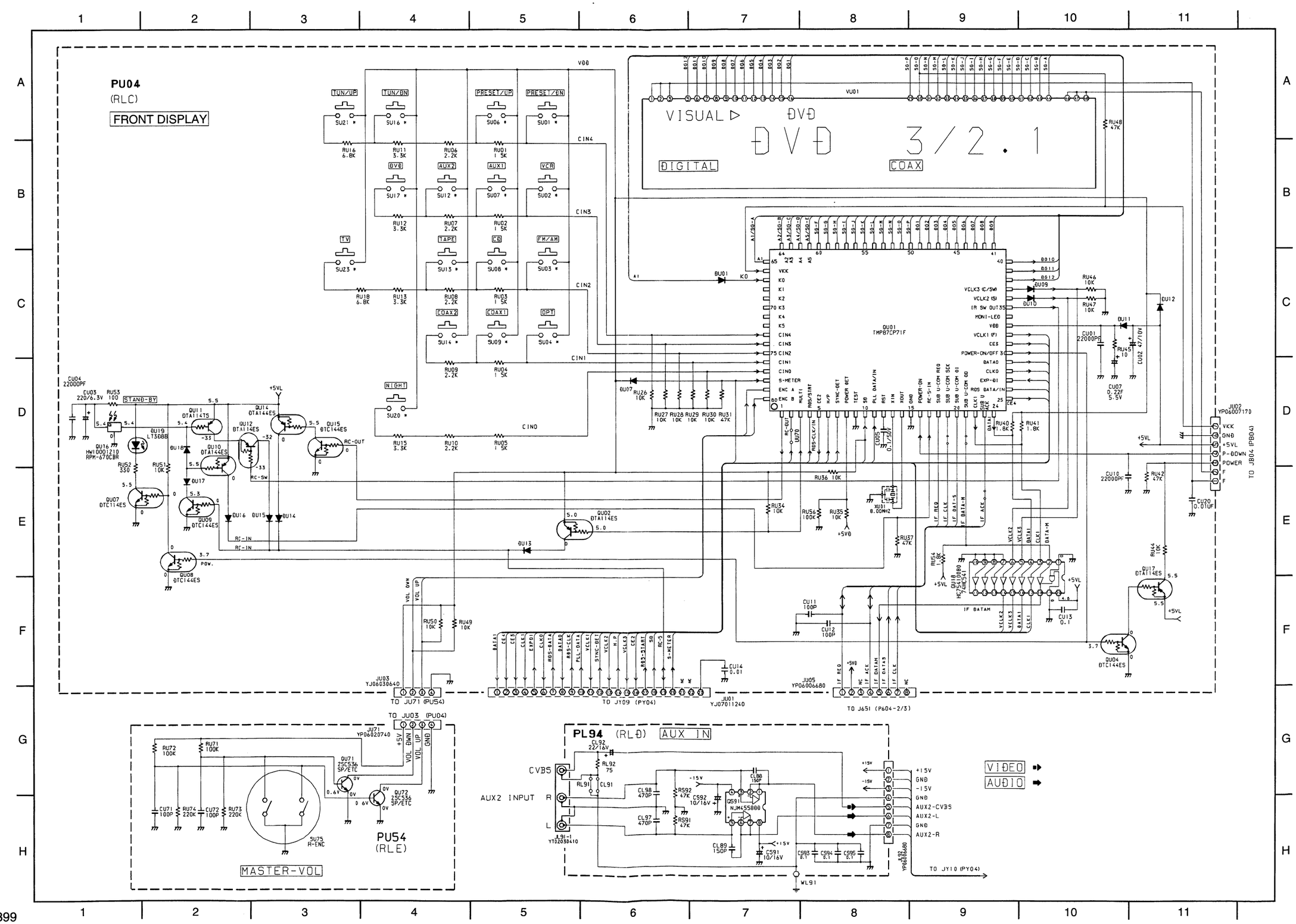
Q501 : LC7218



4-3

CIRCUIT DIAGRAM

CL14	D11	CS92	H7	CU04	D1	CU14	F7	DU10	C10	DU17	E2	QS91	H7	QU10	D2	QU18	F9	RU02	B5	RU09	D4	RU18	C4	RU34	E7	RU42	E11	RU50	F4	RU72	G2	SU06	A5	SU16	A4	XU01	E8
CL88	G7	CS93	H8	CU05	D8	CU20	E11	DU11	C10	DU18	D2	QU01	C8	QU11	D2	QU71	G3	RU03	C5	RU10	D4	RU26	D6	RU35	E8	RU44	E11	RU51	D2	RU73	H2	SU07	B5	SU17	B4		
CL89	H7	CS94	H8	CU07	D10	CU71	H2	DU12	C11	DU19	D2	QU02	E6	QU12	D2	QU72	H4	RU04	D5	RU11	B4	RU27	D6	RU36	E8	RU45	C10	RU52	D1	RU74	H2	SU08	C5	SU20	D4		
CL92	G6	CS95	H8	CU10	E10	CU72	H2	DU13	E5	JL91	H5	QU04	F10	QU14	D3	RL92	G6	RU05	D5	RU12	B4	RU28	D6	RU37	E8	RU46	C10	RU53	D1	SU01	A5	SU09	C5	SU21	A3		
CL97	H6	CU01	C10	CU11	F8	DU01	C7	DU14	E3	JL92	H8	QU07	E1	QU15	D3	RS91	G6	RU06	B4	RU13	C4	RU29	D7	RU38	E9	RU47	C10	RU54	E9	SU02	B5	SU12	B4	SU23	C3		
CL98	G6	CU02	C11	CU12	F8	DU07	D6	DU15	E3	JU01	G7	QU08	E2	QU16	D1	RS92	H6	RU07	B4	RU15	D4	RU30	D7	RU40	D9	RU48	A10	RU56	E8	SU03	C5	SU13	C4	SU75	H3		
CS91	H7	CU03	D1	CU13	F10	DU09	C10	DU16	E2	JU71	G4	QU09	E2	QU17	F11	RU01	B5	RU08	C4	RU16	B3	RU31	D7	RU41	D10	RU49	F4	RU71	G2	SU04	C5	SU14	C4	VU01	A8		

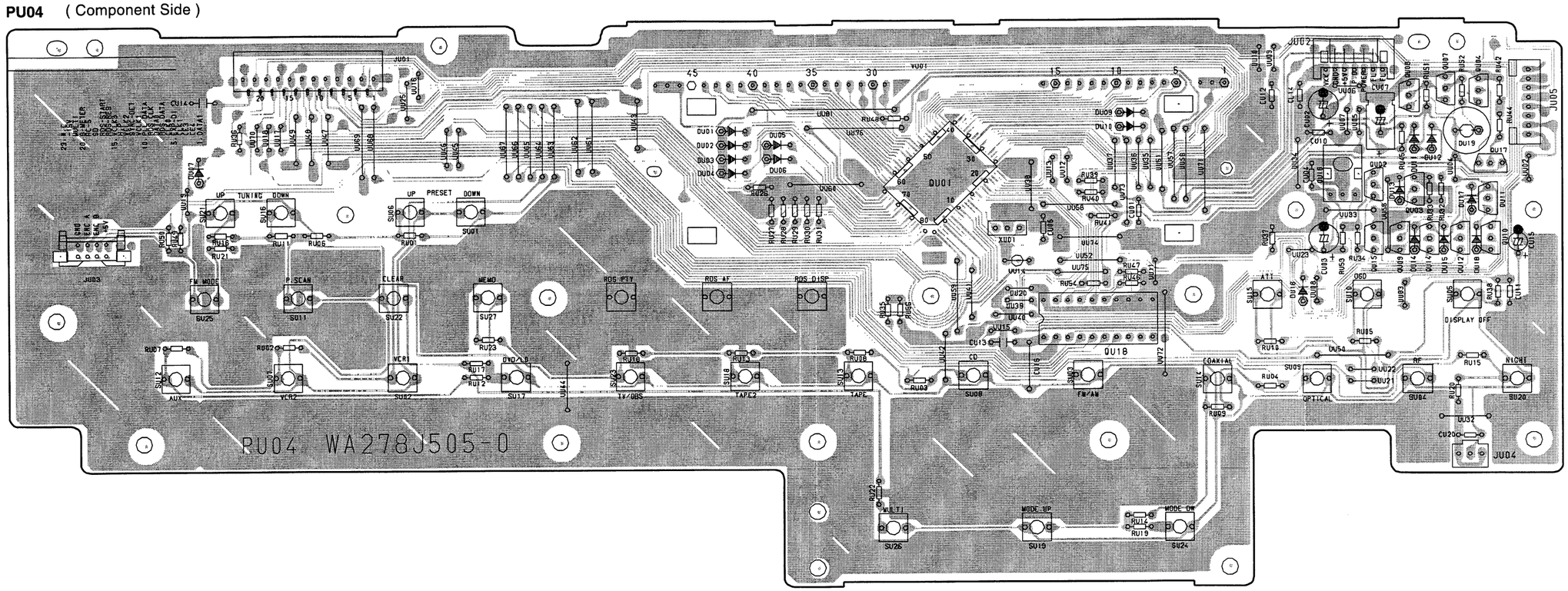


4-4

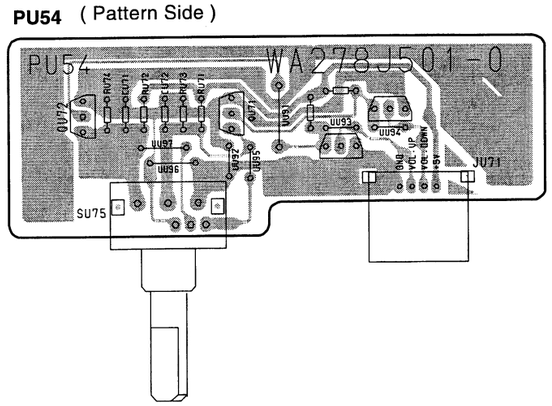
PRINTED CIRCUIT BOARD

CL14	B15	CS94	J12	CU07	B15	CU71	I2	DU11	B16	DU18	D16	QU01	C11	QU11	C17	QU71	I3	RU03	E11	RU10	E14	RU26	C9	RU35	D10	RU44	B17	RU51	B16	RU73	I2	SU07	E4	SU17	E6
CL92	J12	CS95	J12	CU10	B15	CU72	I2	DU12	B16	DU19	B16	QU02	C15	QU12	D12	QU72	I1	RU04	E14	RU11	C4	RU27	C9	RU36	B3	RU45	B16	RU52	B16	RU74	I2	SU08	E11	SU20	E17
CL97	I12	CU01	C13	CU11	D17	DU01	B9	DU13	C16	JL91	I14	QU04	B16	QU14	D12	RL92	I12	RU05	D15	RU12	E6	RU28	C9	RU37	C14	RU46	D13	RU53	D15	SU01	C6	SU09	E15	SU21	C3
CL98	I13	CU02	B15	CU12	B14	DU07	C3	DU14	D16	JL92	K13	QU07	B16	QU15	D15	RS91	J13	RU06	C4	RU13	E9	RU29	C9	RU38	D17	RU47	D13	RU54	D12	SU02	E5	SU12	E3	SU23	E7
CS91	J12	CU03	D15	CU13	D11	DU09	B13	DU15	D16	JU01	A5	QU08	B16	QU16	C15	RS92	J13	RU07	D3	RU15	E16	RU30	C9	RU40	C12	RU48	B10	RU56	D10	SU03	E12	SU13	E10	SU75	J2
CS92	J13	CU04	C15	CU14	B3	DU10	B13	DU16	D15	JU71	I5	QU09	D16	QU17	B17	RU01	C5	RU08	E10	RU16	C3	RU31	C10	RU41	C13	RU49	C3	RU71	I3	SU04	E16	SU14	E14	VU01	B11
CS93	J12	CU05	C12	CU20	E16	DU11	B13	DU17	C16	QS91	J13	QU10	C17	QU18	E13	RU02	D4	RU09	E14	RU18	E8	RU34	D15	RU42	B17	RU50	C3	RU72	I2	SU06	C5	SU16	C4	XU01	C12

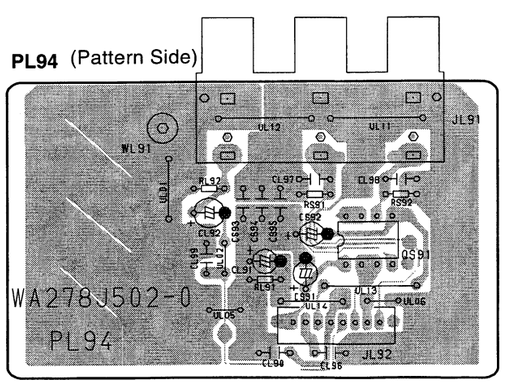
PU04 (Component Side)



PU54 (Pattern Side)

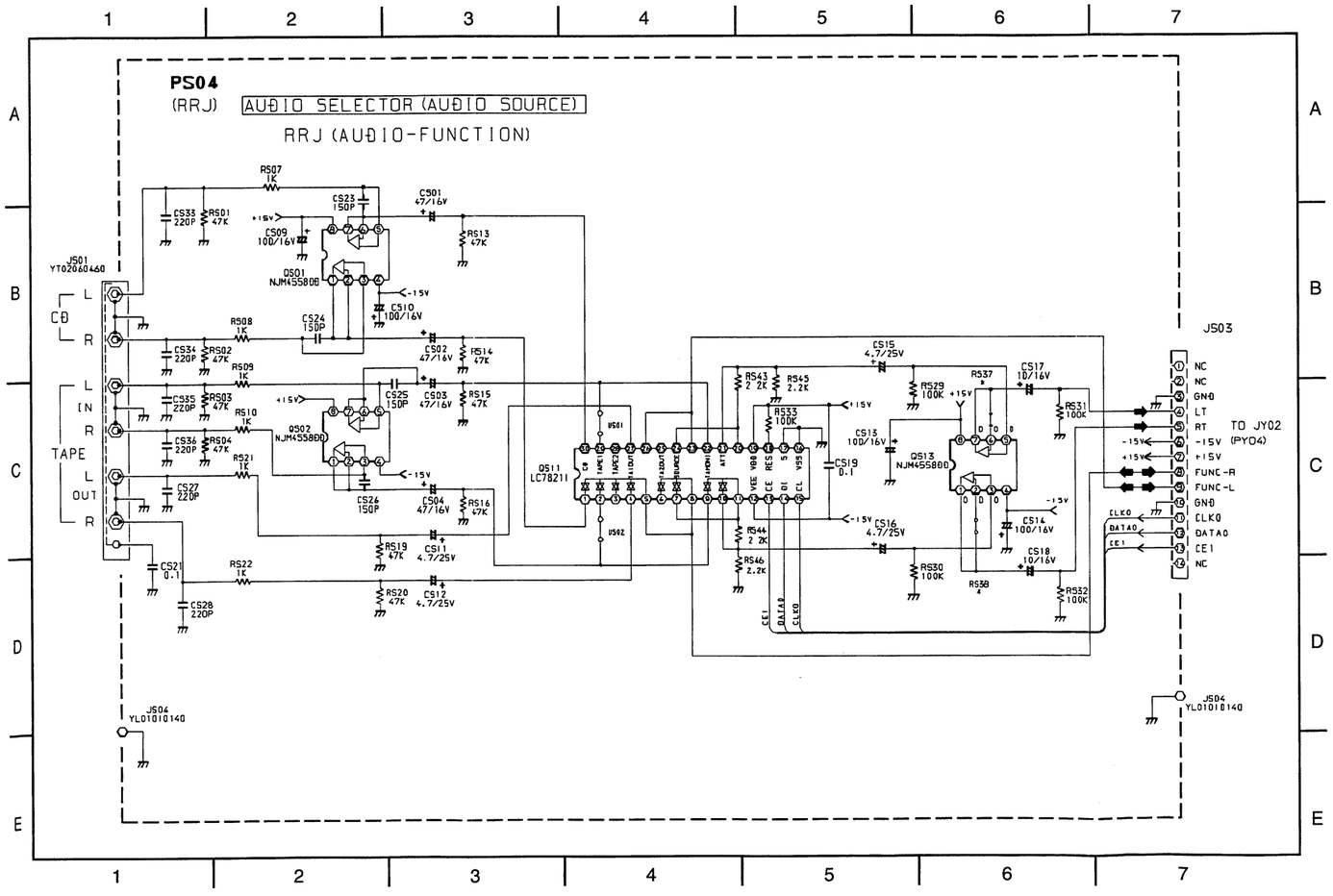


PL94 (Pattern Side)



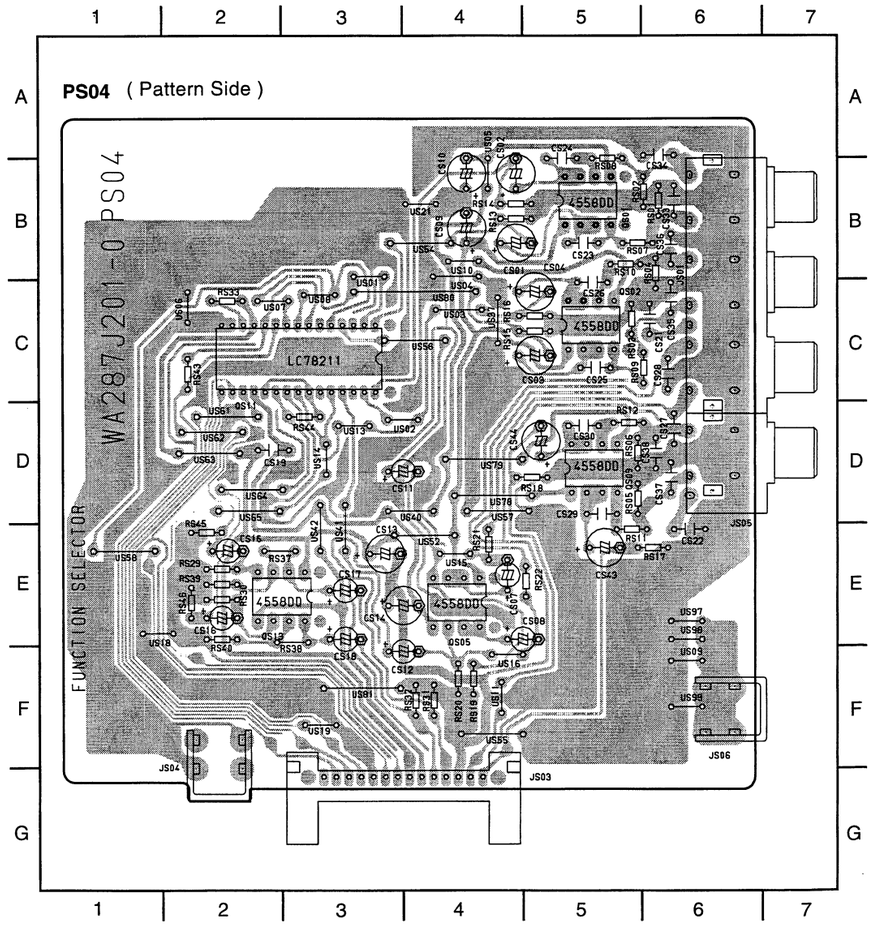
CIRCUIT DIAGRAM

CS01	A3	CS11	C3	CS17	B6	CS25	C3	CS35	C1	QS01	B2	RS03	C2	RS13	B3	RS21	C2	RS33	C5
CS02	B3	CS12	D3	CS18	D6	CS26	C2	CS36	C1	QS02	C2	RS04	C2	RS14	B3	RS22	D2	RS43	C5
CS03	C3	CS13	C5	CS19	C5	CS27	C1	JS01	C6	QS11	C4	RS07	A2	RS15	C3	RS29	C6	RS44	C5
CS04	C3	CS14	C6	CS21	D1	CS28	D1	JS03	G3	QS13	C6	RS08	B2	RS16	C3	RS30	D6	RS45	C5
CS09	B2	CS15	B5	CS23	A2	CS33	B1	JS04	F2	RS01	B2	RS09	B2	RS19	C3	RS31	C6	RS46	D5
CS10	B3	CS16	C5	CS24	B2	CS34	B1	JS06	F6	RS02	C2	RS10	C2	RS20	D3	RS32	D6		



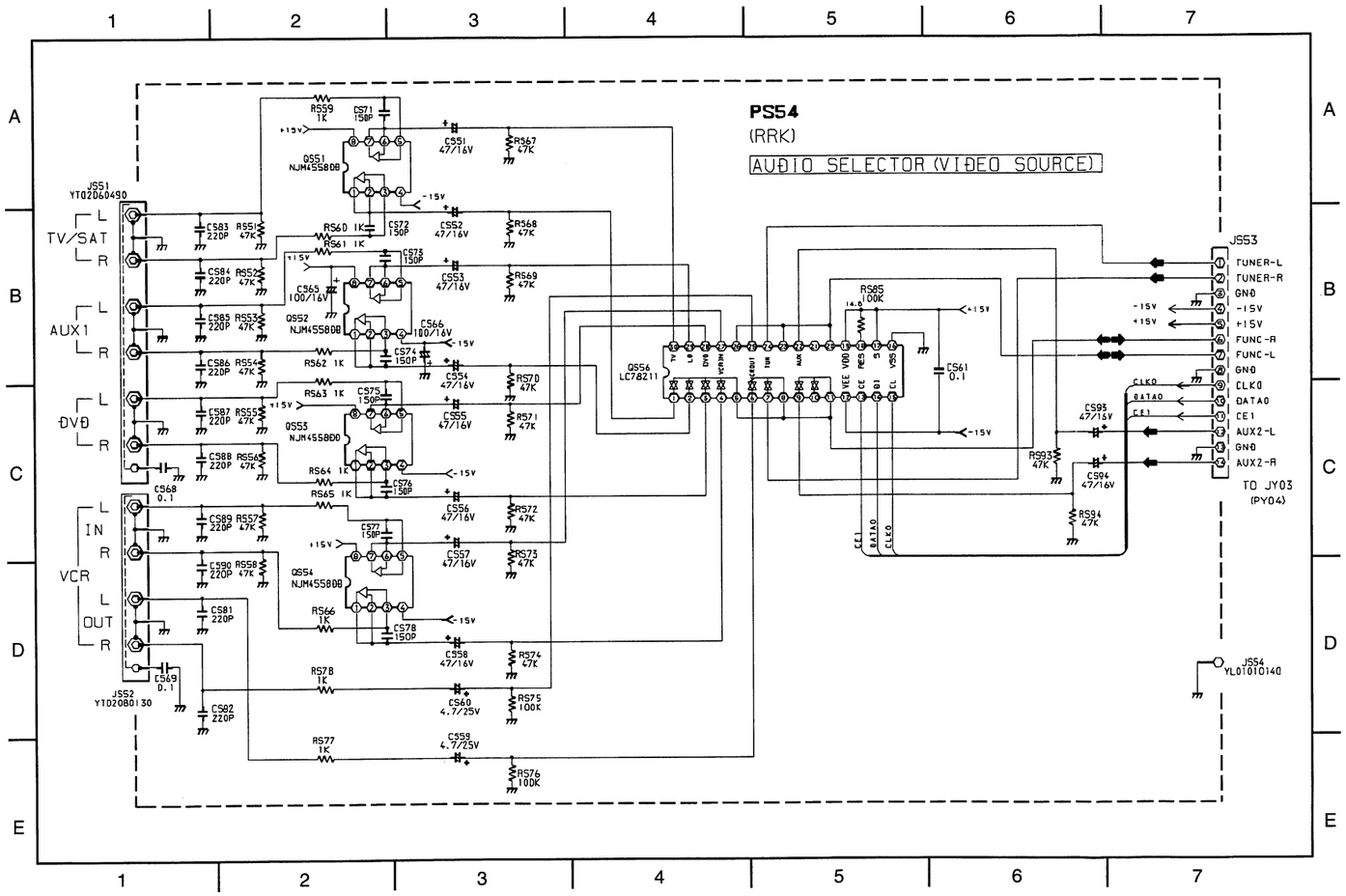
PRINTED CIRCUIT BOARD

CS01	B4	CS13	E3	CS23	B5	CS35	C6	QS11	C2	RS09	C5	RS21	E4	RS44	D3		
CS02	B4	CS14	E3	CS24	A5	CS36	B6	QS13	E2	RS10	B5	RS22	E5	RS45	E2		
CS03	C5	CS15	E2	CS25	C5	JS01	C6	RS01	B6	RS13	B4	RS29	E2	RS46	D5		
CS04	C5	CS16	E2	CS26	C5	JS03	G4	RS02	B6	RS14	B4	RS30	E2				
CS09	B4	CS17	E3	CS27	D6	JS04	F2	RS03	C5	RS15	C5	RS31	F4				
CS10	B4	CS18	E3	CS28	C6	JS06	F6	RS04	B6	RS16	C5	RS32	F4				
CS11	D4	CS19	D2	CS33	B6	QS01	B5	RS07	B5	RS19	F4	RS33	C2				
CS12	F4	CS21	C6	CS34	B6	QS02	C5	RS08	B5	RS20	F4	RS43	C2				



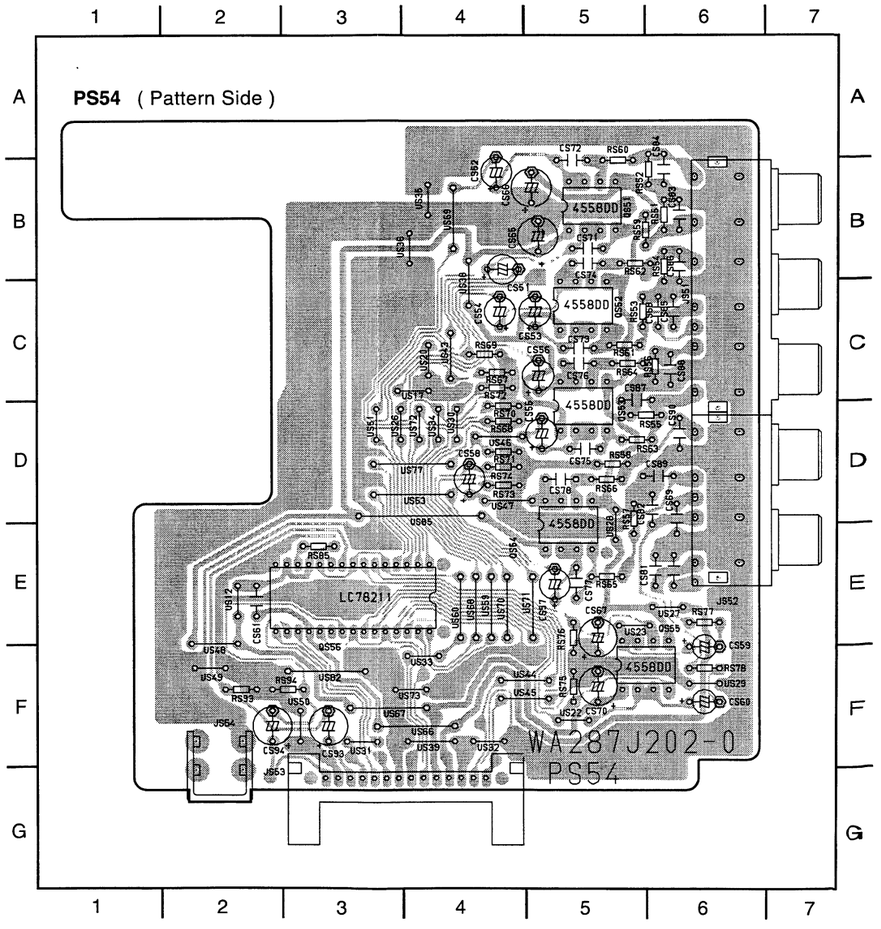
CIRCUIT DIAGRAM

CS51	A3	CS59	E3	CS72	B2	CS82	D1	CS90	D1	QS53	C2	RS56	C2	RS64	C2	RS72	C3
CS52	B3	CS60	D3	CS73	B3	CS83	B1	CS93	C6	QS54	D2	RS57	C2	RS65	C2		
CS53	B3	CS61	B6	CS74	B3	CS84	B1	CS94	C6	QS56	B4	RS58	D2	RS66	D2		
CS54	B3	CS65	B2	CS75	C2	CS85	B1	JS51	A1	RS51	B2	RS59	A2	RS67	A3		
CS55	C3	CS66	B3	CS76	C3	CS86	B1	JS52	D1	RS52	B2	RS60	B2	RS68	B3		
CS56	C3	CS68	C1	CS77	C2	CS87	C1	JS53	B7	RS53	B2	RS61	B2	RS69	B3		
CS57	C3	CS69	D1	CS78	D3	CS88	C1	QS51	A2	RS54	B2	RS62	B2	RS70	B3		
CS58	D3	CS71	A2	CS81	D1	CS89	C1	QS52	B2	RS55	C2	RS63	C2	RS71	C3		



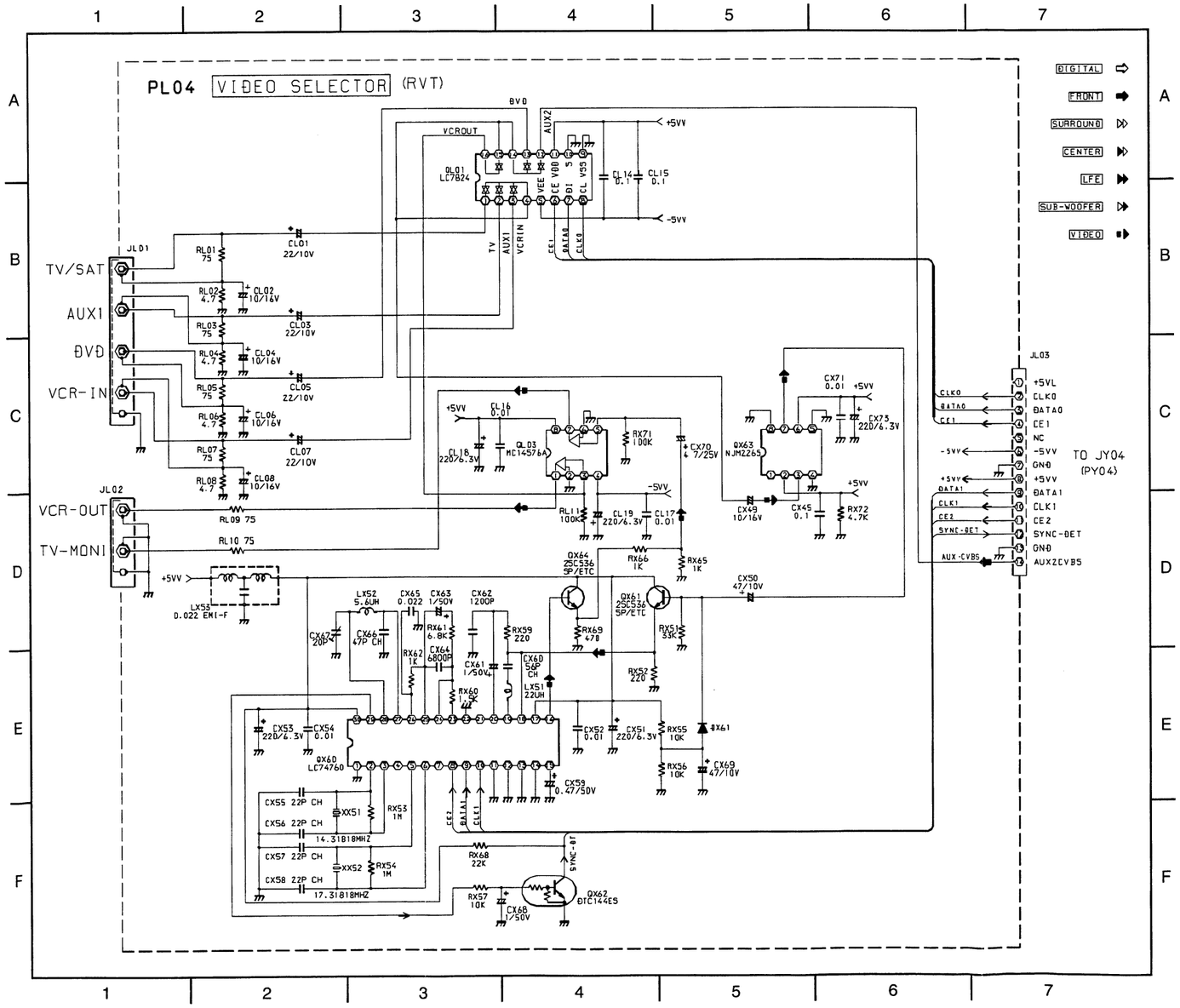
PRINTED CIRCUIT BOARD

CS51	B4	CS59	E6	CS72	A5	CS82	E6	CS90	D6	QS53	D5	RS56	C6	RS64	C5	RS72	C4
CS52	B4	CS60	F6	CS73	C5	CS83	B6	CS93	F3	QS54	E5	RS57	D5	RS65	E5		
CS53	C5	CS61	E2	CS74	B5	CS84	A6	CS94	F2	QS56	E3	RS58	D5	RS66	D5		
CS54	C4	CS65	B4	CS75	D5	CS85	C6	JS51	C6	RS51	B6	RS59	B5	RS67	C4		
CS55	D5	CS66	B4	CS76	C5	CS86	B6	JS52	E6	RS52	B6	RS60	A5	RS68	D4		
CS56	C5	CS68	C6	CS77	E5	CS87	D6	JS53	G3	RS53	C5	RS61	C5	RS69	C4		
CS57	E5	CS69	D6	CS78	D5	CS88	C6	QS51	B5	RS54	B6	RS62	B5	RS70	D4		
CS58	D4	CS71	B5	CS81	E6	CS89	D5	QS52	C5	RS55	C5	RS63	D5	RS71	D4		



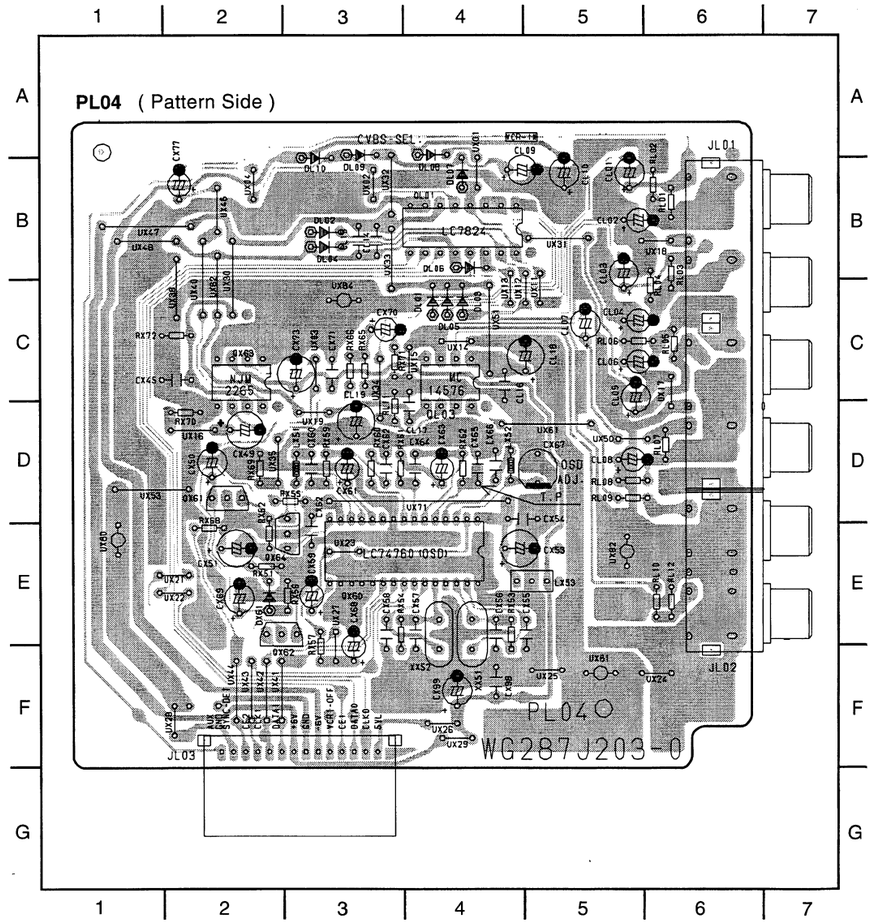
CIRCUIT DIAGRAM

CL01	B2	CL16	C4	CX54	E2	CX64	E3	JL01	B1	QX62	F4	RL08	C2	RX57	F3	RX72	D6
CL02	B2	CL17	D4	CX55	F2	CX65	D3	JL02	D2	QX63	C5	RL09	D2	RX59	D4	XX51	F2
CL03	B2	CL18	C3	CX56	F2	CX66	D3	JL03	C7	QX64	D4	RL10	D2	RX60	E3	XX52	F2
CL04	C2	CL19	D4	CX57	F2	CX67	D2	LX51	E4	RL01	B2	RL11	D4	RX61	D3		
CL05	C2	CX45	D5	CX58	F2	CX68	F4	LX52	D3	RL02	B2	RX51	D5	RX62	E3		
CL06	C2	CX49	D5	CX59	E4	CX69	E5	LX53	D2	RL03	B2	RX52	E4	RX65	D5		
CL07	C2	CX50	D5	CX60	E4	CX70	C5	QL01	A3	RL04	C2	RX53	F3	RX66	D4		
CL08	C2	CX51	E4	CX61	E3	CX71	C6	QL03	C4	RL05	C2	RX54	F3	RX68	F3		
CL14	A4	CX52	E4	CX62	D3	CX73	C6	QX60	E3	RL06	C2	RX55	E5	RX69	D4		
CL15	A4	CX53	E2	CX63	D3	DX61	E5	QX61	D4	RL07	C2	RX56	E5	RX71	C4		



PRINTED CIRCUIT BOARD

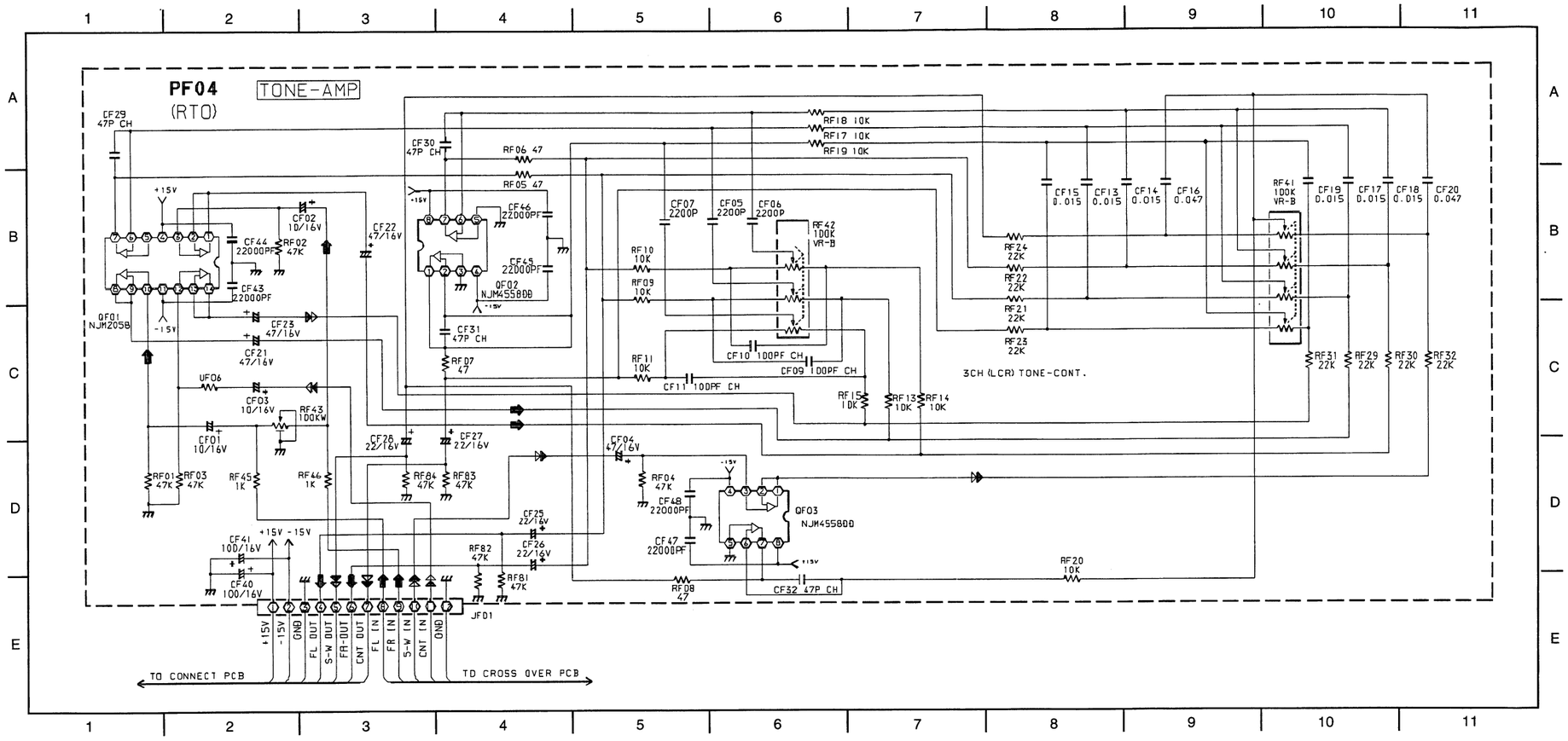
CL01	B5	CL18	C5	CX58	E3	CX70	C3	QL01	B4	RL06	C5	RX57	E3	XX52	F4		
CL02	B5	CL19	D3	CX59	E3	CX71	C3	QL03	D4	RL07	D6	RX59	D3				
CL03	B5	CX45	C1	CX60	D3	CX73	C3	QX60	E3	RL08	D5	RX60	D3				
CL04	C5	CX49	D2	CX61	D3	DL09	B3	QX61	D2	RL09	D5	RX61	D3				
CL05	C5	CX50	D2	CX62	D3	DL10	B3	QX62	F2	RL10	E6	RX62	D4				
CL06	C5	CX51	E2	CX63	D4	DX61	E2	QX63	C2	RL11	D3	RX65	C3				
CL07	C5	CX52	D3	CX64	D4	JL01	A6	QX64	E3	RX51	E2	RX66	C3				
CL08	D5	CX53	E5	CX65	D4	JL02	F6	RL01	B6	RX52	D2	RX68	E2				
CL14	B3	CX54	D5	CX66	D4	JL03	F2	RL02	B6	RX53	E4	RX69	D2				
CL15	B3	CX55	E5	CX67	D5	LX51	D3	RL03	B6	RX54	E3	RX71	C3				
CL16	C4	CX56	E4	CX68	E3	LX52	D4	RL04	C6	RX55	D3	RX72	C1				
CL17	D4	CX57	E4	CX69	E2	LX53	E5	RL05	C6	RX56	E3	XX51	F4				



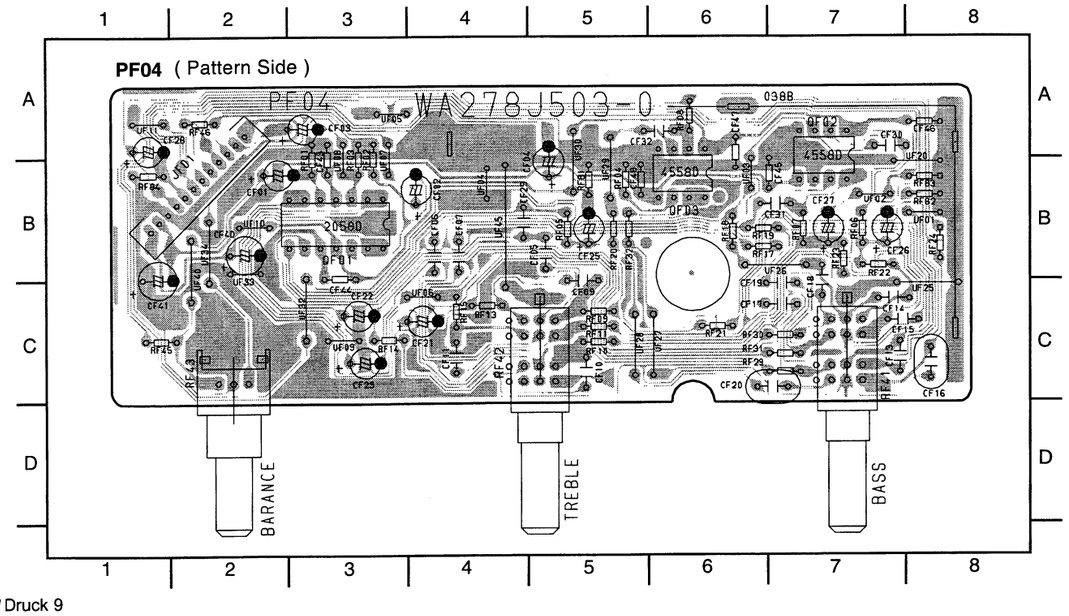
4-8

CIRCUIT DIAGRAM

CF01	C3	CF06	B6	CF13	B8	CF18	B11	CF23	C2	CF29	A1	CF41	D2	CF47	D5	RF01	D1	RF06	A4	RF11	C5	RF18	A6	RF23	C8	RF32	C11	RF46	D3
CF02	B3	CF07	B5	CF14	B9	CF19	B10	CF25	D4	CF30	A3	CF43	B2	CF48	D5	RF02	B2	RF07	C4	RF13	C7	RF19	A6	RF24	B8	RF41	B10	RF81	E4
CF03	C2	CF09	C6	CF15	B8	CF20	B11	CF26	D4	CF31	C4	CF44	B2	QF01	B1	RF03	D2	RF08	E5	RF14	C7	RF20	B5	RF29	C10	RF42	B6	RF82	E4
CF04	D5	CF10	C6	CF16	B9	CF21	C2	CF27	D4	CF32	E6	CF45	B4	QF02	B4	RF04	D5	RF09	B5	RF15	C7	RF21	C8	RF30	C11	RF43	C2	RF83	D4
CF05	B6	CF11	C5	CF17	B10	CF22	B3	CF28	D3	CF40	E2	CF46	B4	QF03	D6	RF05	B4	RF10	B5	RF17	A6	RF22	B8	RF31	C10	RF45	D2	RF84	D3



PRINTED CIRCUIT BOARD



CF01	B2	CF11	C4	CF21	C4	CF31	B7	CF48	B5	RF06	B7	RF17	B6	RF30	C7	RF82	B8
CF02	B4	CF13	C7	CF22	C3	CF32	A6	QF01	B3	RF07	B7	RF18	B6	RF31	C7	RF83	B8
CF03	A3	CF14	C7	CF23	C3	CF40	B2	QF02	A7	RF08	A6	RF19	B6	RF32	B5	RF84	B1
CF04	B5	CF15	C7	CF25	B5	CF41	C1	QF03	B6	RF09	C5	RF20	B5	RF41	C7		
CF05	B5	CF16	C8	CF26	B7	CF43	B3	RF01	B3	RF10	C5	RF21	C6	RF42	C4		
CF06	B4	CF17	C7	CF27	B7	CF44	C3	RF02	B3	RF11	C5	RF22	B7	RF43	C2		
CF07	B4	CF18	C7	CF28	A1	CF45	B7	RF03	B3	RF13	C4	RF23	B7	RF45	C1		
CF09	C5	CF19	C7	CF29	B4	CF46	A8	RF04	B5	RF14	C3	RF24	B8	RF46	A2		
CF10	C5	CF20	C7	CF30	A7	CF47	A6	RF05	B5	RF15	C4	RF29	C7	RF81	B5		

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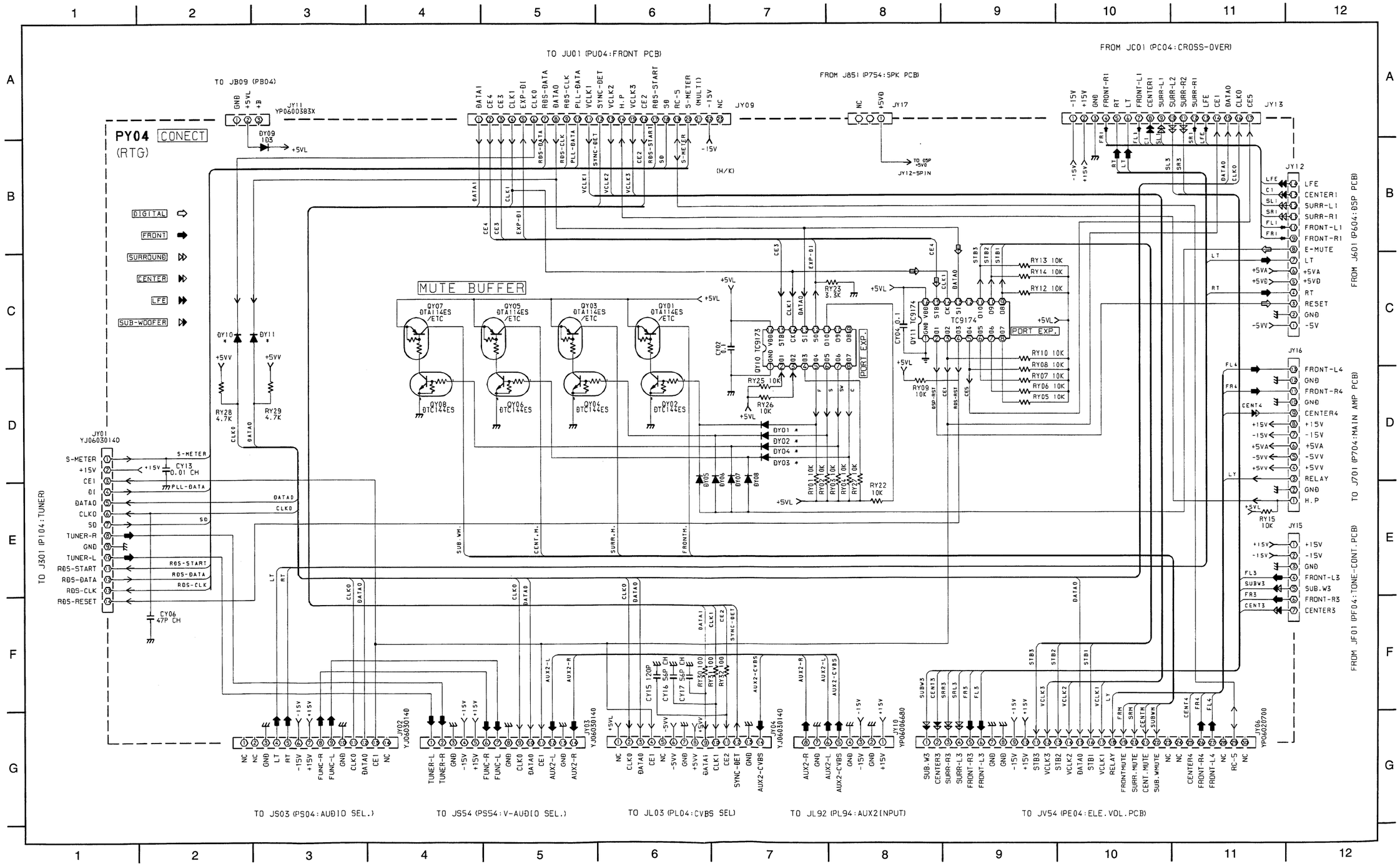
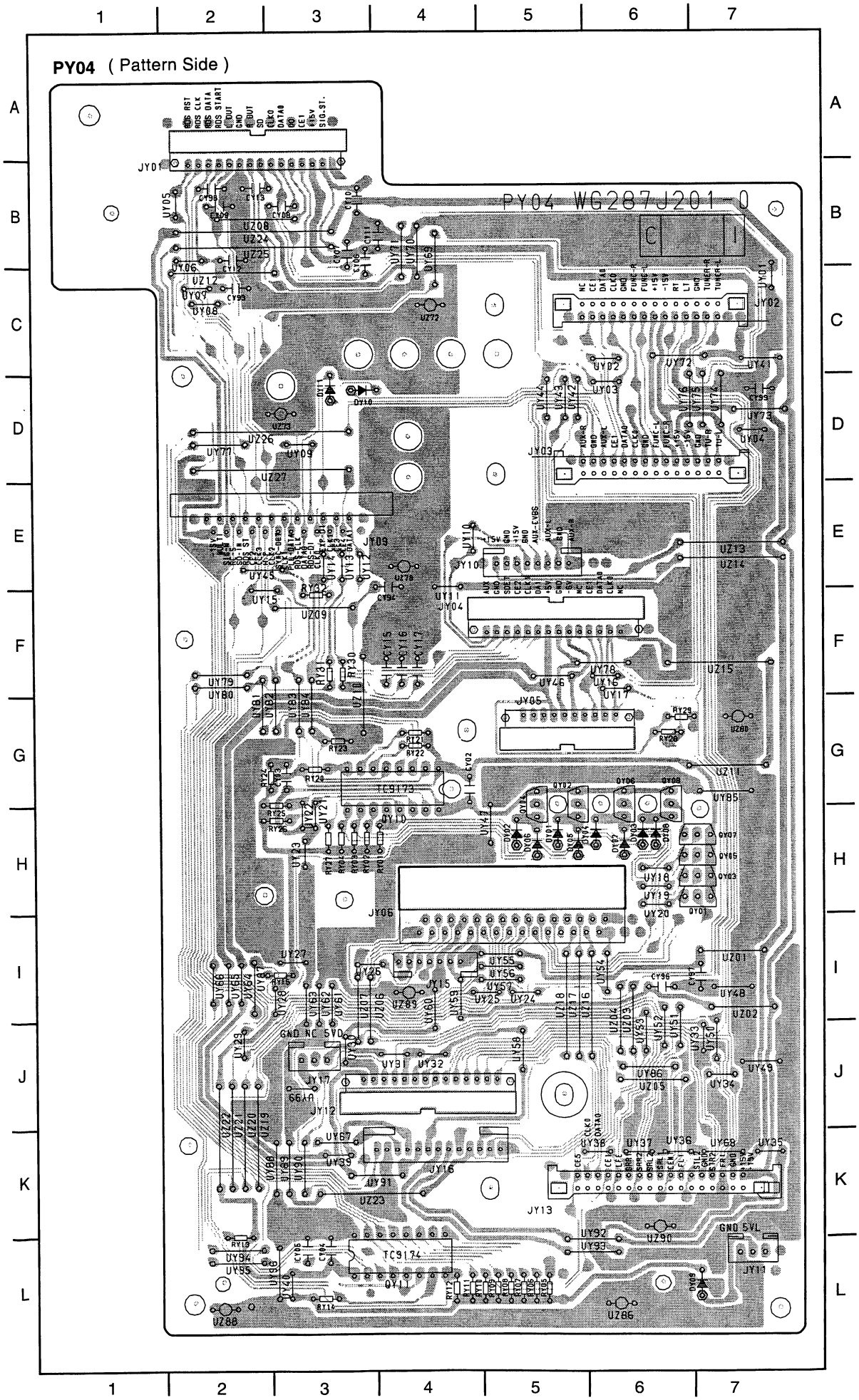
CIRCUIT DIAGRAM

CY02	C7	CY17	F6	DY04	D7	DY09	B3	JY03	G5	JY11	A3	JY17	A8	QY05	C5	QY11	C8	RY05	D9	RY10	C9	RY22	E8	RY28	D2
CY04	C8	CY98	F2	DY05	E6	DY10	C2	JY04	G7	JY12	B12	QY01	C6	QY06	D5	RY01	E7	RY06	D9	RY12	C9	RY23	C8	RY29	D3
CY06	F2	DY01	D7	DY06	E7	DY11	C2	JY06	G11	JY13	A11	QY02	D6	QY07	C4	RY02	E7	RY07	D9	RY13	C9	RY25	D7	RY30	F6
CY15	F6	DY02	D7	DY07	E7	JY01	D1	JY09	A7	JY15	E12	QY03	C5	QY08	D4	RY03	E8	RY08	D9	RY14	C9	RY26	D7	RY31	F7
CY16	F6	DY03	D7	DY08	E7	JY02	G4	JY10	G8	JY16	C12	QY04	D5	QY10	C7	RY04	E8	RY09	D8	RY15	E11	RY27	E8	RY32	F7



PRINTED CIRCUIT BOARD

PY04 (Pattern Side)

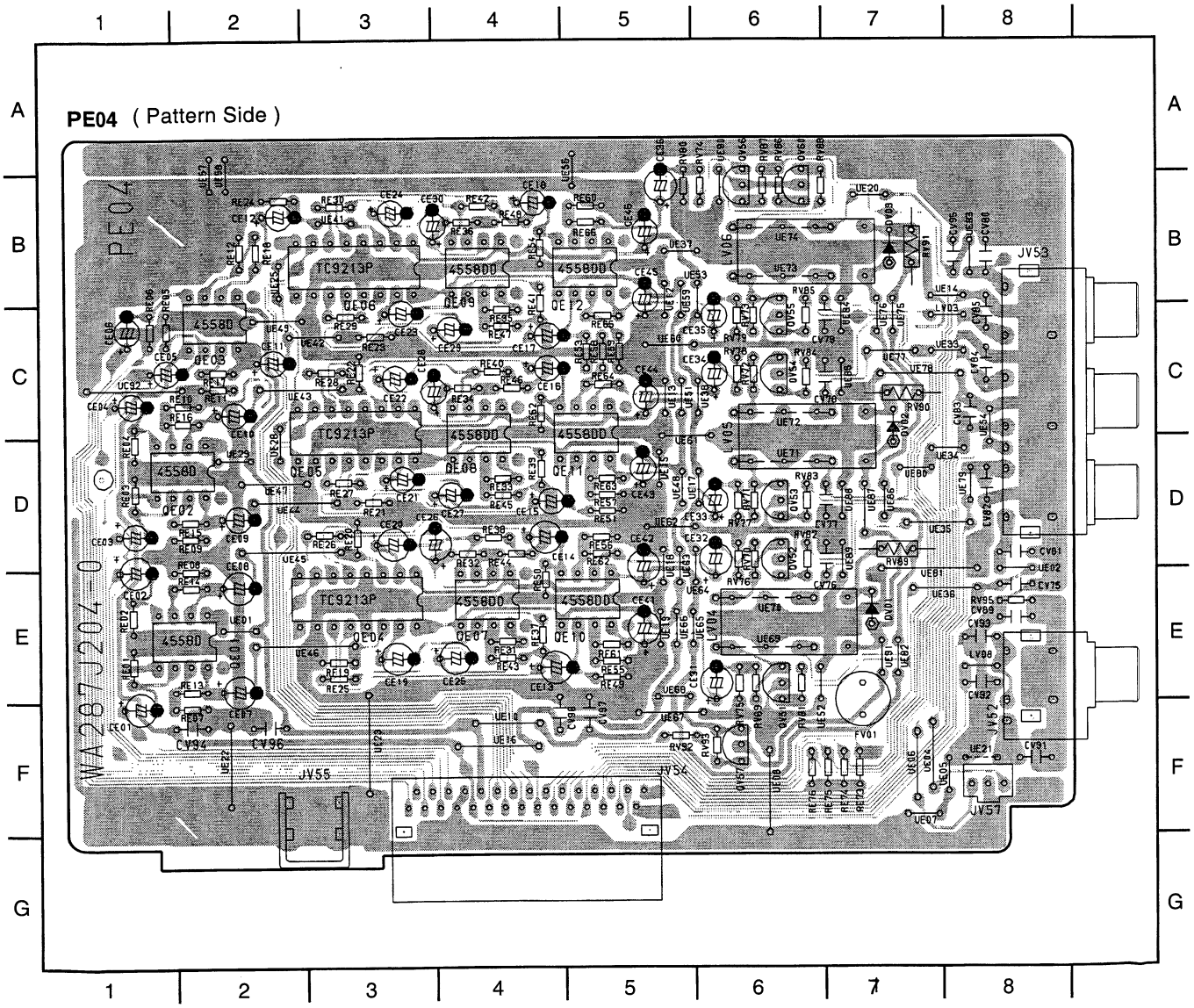


CY02	G4
CY04	L3
CY06	B3
CY15	F4
CY16	F4
CY17	F4
CY98	B2
DY01	H5
DY02	H5
DY03	H6
DY04	H6
DY05	H5
DY06	H5
DY07	H6
DY08	H6
DY09	L7
DY10	D3
DY11	D3
JY01	A2
JY02	C7
JY03	D5
JY04	F4
JY06	H4
JY09	E3
JY10	E5
JY11	L7
JY12	J3
JY13	K5
JY15	I4
JY16	K4
QY01	H7
QY02	G5
QY03	H7
QY04	G5
QY05	H7
QY06	G6
QY07	H7
QY08	G6
QY10	G4
QY11	L4
RY01	H4
RY02	H3
RY03	H3
RY04	H3
RY05	L5
RY06	L5
RY07	L5
RY08	L5
RY09	L5
RY10	L4
RY12	L4
RY13	L2
RY14	L3
RY15	I3
RY22	G4
RY23	G3
RY25	H3
RY26	H3
RY27	H3
RY28	G6
RY29	G6
RY30	F3
RY31	F3
RY32	F3

PRINTED CIRCUIT BOARD

CE01	F1	CE17	C4	CE33	D6	CV89	E8	LV05	D6	QV53	D6	RE11	C2	RE29	C3	RE45	D4	RE61	E5	RV75	F6	RV91	B7
CE02	E1	CE18	B4	CE34	C6	CV91	F8	LV06	B6	QV54	C6	RE13	E2	RE30	B3	RE46	C4	RE62	D5	RV76	D6	RV92	F5
CE03	D1	CE19	E3	CE35	C6	CV94	F2	QE01	E2	QV55	C6	RE14	E2	RE31	E4	RE47	C4	RE63	D5	RV77	D6	RV93	F6
CE04	C1	CE20	D3	CE36	A5	CV96	F2	QE02	D2	QV56	A6	RE15	D2	RE32	D4	RE48	B4	RE64	C5	RV78	C6	RV95	E8
CE05	C1	CE21	D3	CE41	E5	CV97	F5	QE03	C2	QV57	F6	RE16	C2	RE33	D4	RE49	E5	RE65	C5	RV79	C6	UE02	E8
CE06	C1	CE22	C3	CE42	D5	CV98	F5	QE04	E3	QV60	A6	RE17	C2	RE34	C4	RE50	E4	RE66	B6	RV80	A5	UE33	C7
CE07	E2	CE23	C3	CE43	D5	DV01	E7	QE05	D3	RE01	E1	RE19	E3	RE35	C4	RE51	D5	RE73	F7	RV81	F6	UE34	D7
CE08	E2	CE24	B3	CE44	C5	DV02	C7	QE06	B3	RE02	E1	RE20	D3	RE36	B4	RE52	C4	RE74	F7	RV82	D6	UE79	D8
CE09	D2	CE25	E4	CE45	B5	DV03	B7	QE07	E4	RE03	D1	RE21	D3	RE37	E4	RE53	C5	RE75	F7	RV83	D6		
CE10	C2	CE26	D3	CE46	B5	JV52	F8	QE08	D4	RE04	D1	RE22	C3	RE38	D4	RE54	B4	RE76	F6	RV84	C6		
CE11	C2	CE27	D4	CV80	B8	JV53	B8	QE09	B4	RE05	C1	RE23	C3	RE39	D4	RE55	E5	RV69	F6	RV85	B6		
CE12	B2	CE28	C3	CV81	D8	JV54	F5	QE10	E5	RE06	C1	RE24	B2	RE40	C4	RE56	D5	RV70	D6	RV86	A6		
CE13	E4	CE29	C4	CV82	D8	JV55	F3	QE11	D5	RE07	F2	RE25	E3	RE41	C4	RE57	D5	RV71	D6	RV87	A6		
CE14	D4	CE30	B3	CV83	C8	JV57	F8	QE12	B5	RE08	D2	RE26	D3	RE42	B4	RE58	C5	RV72	C6	RV88	A6		
CE15	D4	CE31	E6	CV84	C8	LV03	C8	QV51	F6	RE09	D2	RE27	D3	RE43	E4	RE59	C5	RV73	C6	RV89	D7		
CE16	C4	CE32	D6	CV85	C8	LV04	E6	QV52	D6	RE10	C2	RE28	C3	RE44	D4	RE60	B6	RV74	A6	RV90	C7		

PE04 (Pattern Side)



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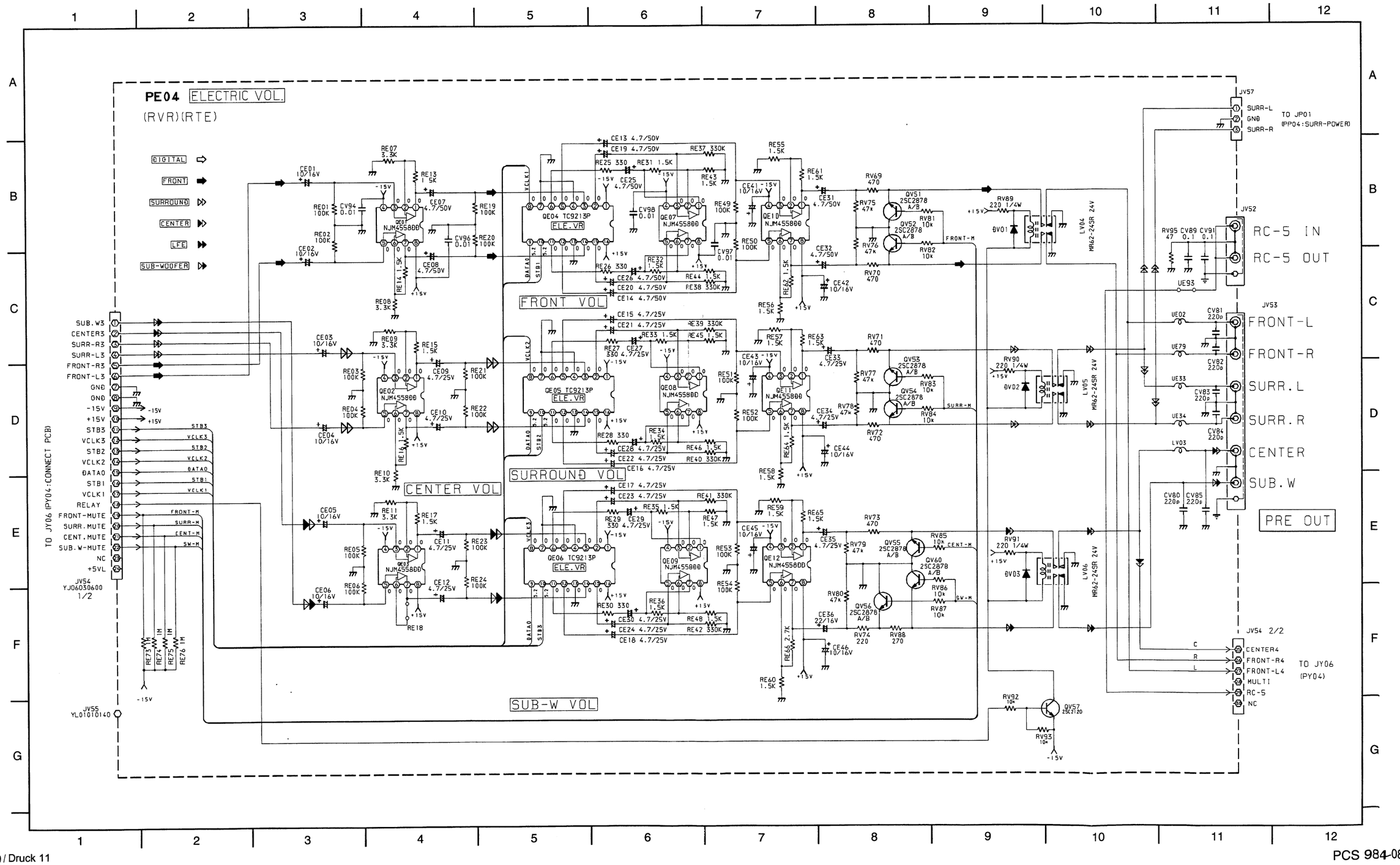
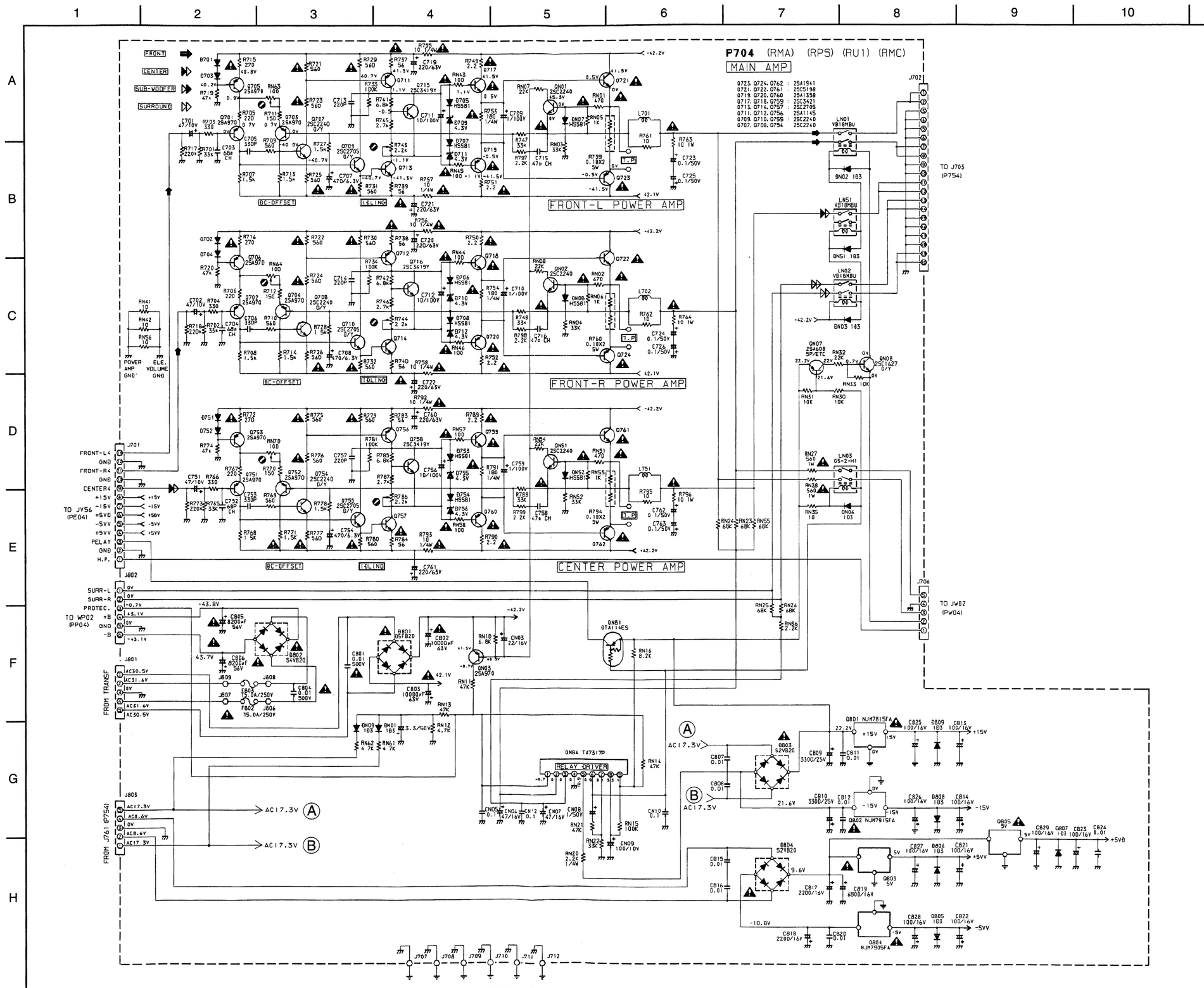
CIRCUIT DIAGRAM

CE01	B3	CE13	B6	CE25	B6	CE41	B7	CV89	B11	JV55	G1	QE07	B6	QV57	G10	RE11	E4	RE25	B6	RE37	B7	RE49	B7	RE61	B7	RV71	C8	RV83	D8	UE02	C11
CE02	B3	CE14	C6	CE26	C6	CE42	C8	CV91	B11	JV57	A11	QE08	D6	QV60	E8	RE13	B4	RE26	C6	RE38	C6	RE50	B7	RE62	C7	RV72	D8	RV84	D8	UE33	D11
CE03	C3	CE15	C6	CE27	C6	CE43	D7	CV94	B3	LV03	D11	QE09	E6	RE01	B3	RE14	C4	RE27	C6	RE39	C6	RE51	D7	RE63	C7	RV73	E8	RV85	E9	UE34	D11
CE04	D3	CE16	D6	CE28	D6	CE44	D8	CV96	B4	LV04	B10	QE10	B7	RE02	B3	RE15	C4	RE28	D6	RE40	D6	RE52	D7	RE64	D7	RV74	F8	RV86	F9	UE79	C11
CE05	E3	CE17	E6	CE29	E6	CE45	E7	CV97	B7	LV05	D10	QE11	D7	RE03	D3	RE16	D4	RE29	E6	RE41	E7	RE53	E7	RE65	B7	RV75	B8	RV87	F9		
CE06	F3	CE18	F6	CE30	F6	CE46	F8	CV98	B6	LV06	E10	QE12	E7	RE04	D3	RE17	E4	RE30	F6	RE42	F7	RE54	F7	RE66	F7	RV76	B8	RV88	F8		
CE07	B4	CE19	B6	CE31	B8	CV80	E11	DV01	B9	QE01	B4	QV51	B8	RE05	E3	RE19	B5	RE31	B6	RE43	B7	RE55	B7	RE73	F2	RV77	D8	RV89	B9		
CE08	C4	CE20	C6	CE32	C8	CV81	C11	DV02	D9	QE02	D4	QV52	B8	RE06	E3	RE20	B5	RE32	C6	RE44	C6	RE56	C7	RE74	F2	RV78	D8	RV90	D9		
CE09	D4	CE21	C6	CE33	C8	CV82	C11	DV03	E9	QE03	E4	QV53	D8	RE07	B4	RE21	D4	RE33	C6	RE45	C6	RE57	C7	RE75	F2	RV79	E8	RV91	E9		
CE10	D4	CE22	D6	CE34	D8	CV83	D11	JV52	B11	QE04	B5	QV54	D8	RE08	C4	RE22	D4	RE34	D6	RE46	B6	RE58	D7	RE76	F2	RV80	F9	RV92	G9		
CE11	E4	CE23	E6	CE35	E8	CV84	D11	JV53	C11	QE05	D5	QV55	E8	RE09	C4	RE23	E4	RE35	E6	RE47	E7	RE59	E7	RV69	B8	RV81	B8	RV93	G9		
CE12	E4	CE24	F6	CE36	F8	CV85	E11	JV54	E1	QE06	E5	QV56	F8	RE10	D4	RE24	E4	RE36	F6	RE48	F7	RE60	F7	RV70	C8	RV32	B8	RV95	B11		



4-13

CIRCUIT DIAGRAM



CN03	F5	D807	H9	RN45	B4
CN04	G4	D808	G8	RN46	C4
CN05	G4	D809	G8	RN51	D5
CN06	G5	F802	F2	RN52	E5
CN07	G5	F803	F2	RN53	D5
CN08	G5	J701	D1	RN54	D5
CN09	H6	J702	A8	RN55	E7
CN10	G6	J706	E8	RN56	C2
CN12	G5	J707	H4	RN57	D4
CN13	E8	J708	H4	RN58	E4
CN14	E8	J709	H4	RN61	G4
CN15	F8	J710	H5	RN62	G3
CN16	F8	J711	H5	RN63	A3
C701	A2	J712	H5	RN64	C3
C702	C2	J801	F1	RN70	D3
C703	B2	J802	E1	R701	B3
C704	C2	J803	J1	R702	C2
C705	B2	J806	F3	R703	A2
C706	C2	J807	F2	R704	C2
C707	B3	J808	F3	R705	A2
C708	C3	J809	F2	R706	C2
C709	A5	LN01	A8	R707	B2
C710	C5	LN02	C8	R708	C2
C711	A4	LN03	D8	R709	B3
C712	C4	LN51	B8	R710	C3
C713	A3	L701	A6	R711	A3
C714	C3	L702	C6	R712	C3
C715	B5	L751	D6	R713	B3
C716	C5	QN01	A5	R714	C3
C719	A4	QN02	C5	R715	A2
C720	B4	QN03	F4	R716	B2
C721	B4	QN04	G5	R717	B2
C722	D4	QN07	C7	R718	C2
C723	B6	QN08	C8	R719	A2
C724	C6	QN51	D5	R720	C2
C725	B6	QN81	F6	R721	A3
C726	C6	Q701	A2	R722	B3
C751	D2	Q702	C2	R723	A3
C752	E2	Q703	A3	R724	C3
C753	E2	Q704	C3	R725	B3
C754	B3	Q705	A2	R726	C3
C756	D4	Q706	C2	R727	B3
C757	D3	Q707	B3	R728	C3
C758	E5	Q708	C3	R729	A3
C759	D5	Q709	B3	R730	B3
C760	D4	Q710	C3	R731	B3
C761	E4	Q711	A4	R732	C3
C762	E6	Q712	B4	R733	A3
C763	E6	Q713	B4	R734	C3
C801	F3	Q714	C4	R737	A4
C802	F4	Q715	A4	R738	B4
C803	F4	Q716	C4	R739	B4
C804	F3	Q717	A4	R740	C4
C805	F2	Q718	C4	R741	A4
C806	F2	Q719	B4	R742	C4
C807	G6	Q720	C4	R743	B4
C808	G6	Q721	A6	R744	C4
C809	G7	Q722	B6	R745	A4
C810	G7	Q723	B6	R746	C4
C811	G8	Q724	C6	R747	A5
C812	G8	Q751	D2	R748	C5
C813	G9	Q752	D3	R749	A4
C814	G9	Q753	D2	R750	B4
C815	H6	Q754	E3	R751	B4
C816	H6	Q755	E3	R752	C4
C817	H7	Q756	D4	R753	A4
C818	H7	Q757	E4	R754	C4
C819	H8	Q758	D4	R755	A4
C820	H7	Q759	D4	R756	B4
C821	H9	Q760	E4	R757	B4
C822	H9	Q761	D6	R758	C4
C823	H10	Q762	E5	R759	B5
C824	H10	Q801	G8	R760	C5
C825	G8	Q802	G8	R761	A6
C826	G8	Q803	H8	R762	C6
C827	H8	Q804	H8	R763	A6
C828	H8	Q805	G9	R764	C6
C829	H9	RN01	A5	R765	E2
DN01	G4	RN02	C5	R766	D2
DN02	B8	RN03	B5	R767	D2
DN03	C8	RN04	C5	R768	E2
DN04	E8	RN05	A5	R769	E3
DN07	A5	RN06	C5	R770	D3
DN08	C5	RN07	A5	R771	E3
DN09	D3	RN08	C5	R772	D2
DN51	B8	RN10	F4	R773	E2
DN52	D5	RN11	F4	R774	D2
D701	A2	RN12	G4	R775	D3
D702	B2	RN13	F4	R776	D3
D703	A2	RN14	G6	R777	E3
D704	B2	RN15	G6	R778	E3
D705	A4	RN16	F6	R779	D3
D706	C4	RN20	H5	R780	E3
D707	B4	RN21	G5	R781	D3
D708	C4	RN22	H5	R783	D4
D709	A4	RN23	E6	R784	E4
D710	C4	RN24	E7	R785	D4
D711	B4	RN25	F7	R786	E4
D712	C4	RN26	F7	R787	D4
D715	D2	RN27	D7	R788	E5
D752	D2	RN28	D7	R789	D4
D753	D3	RN30	D7	R790	E4
D754	E4	RN31	D7	R791	D4
D755	D4	RN32	C7	R792	D4
D756	E4	RN33	D8	R793	E4
D801	F4	RN35	E7	R794	E5
D802	F3	RN36	F7	R795	E6
D803	G7	RN41	C2	R796	E6
D804	H7	RN42	C2	R797	B5
D805	H8	RN43	A4	R798	C5
D806	H8	RN44	B4	R799	E5

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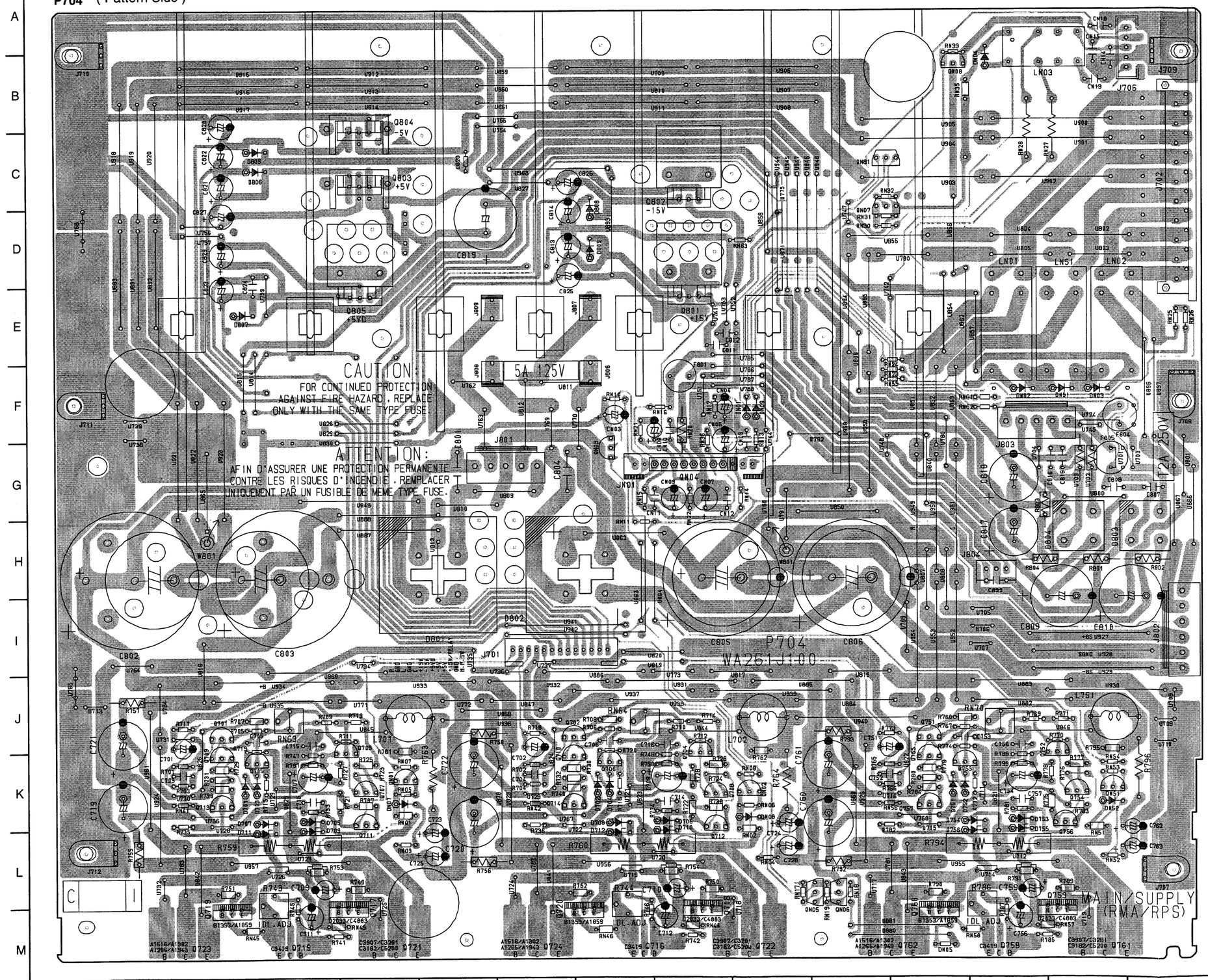
PRINTED CIRCUIT BOARD

P704 (Pattern Side)



CN03	F8	D807	E3	RN45	M3
CN04	F9	D808	D8	RN46	M8
CN05	G10	D809	D8	RN51	L14
CN06	F9	F802	F7	RN52	L14
CN07	G9	F803	E7	RN53	K14
CN08	F9	J701	I7	RN54	K14
CN09	G9	J702	C15	RN55	F12
CN10	F9	J706	B15	RN56	K11
CN12	G9	J707	L15	RN57	M14
CN13	B14	J708	F15	RN58	M13
CN14	B14	J709	B15	RN61	F13
CN15	A14	J710	B1	RN62	F13
CN16	A14	J711	F1	RN63	J4
C701	K2	J712	L1	RN64	J8
C702	K7	J801	G7	RN70	J13
C703	K2	J802	I15	R701	K2
C704	K7	J803	G13	R702	K7
C705	J3	J806	F8	R703	K2
C706	J8	J807	E8	R704	K7
C707	K4	J808	F6	R705	J3
C708	K8	J809	E6	R706	J8
C709	L4	LN01	D13	R707	J3
C710	L9	LN02	D14	R708	J8
C711	M4	LN03	B13	R709	J4
C712	M9	LN51	D14	R710	J9
C713	K4	L701	J5	R711	J5
C714	K9	L702	J10	R712	J9
C715	J4	L751	J14	R713	J5
C716	J8	QN01	K5	R714	J9
C719	K1	QN02	K10	R715	K4
C720	L6	QN03	G8	R716	K8
C721	J1	QN04	G9	R717	J2
C722	K6	QN07	D11	R718	J7
C723	K6	QN08	B12	R719	J3
C724	L10	QN51	K14	R720	J8
C725	L6	QN81	C11	R721	K5
C726	L10	Q701	J3	R722	K9
C751	J11	Q702	J7	R723	K5
C752	K11	Q703	J5	R724	K9
C753	J13	Q704	J9	R725	K5
C754	K14	Q705	K3	R726	K9
C756	M13	Q706	K8	R727	K5
C757	K13	Q707	K5	R728	K9
C758	J13	Q708	K9	R729	K3
C759	L13	Q709	J3	R730	K8
C760	K10	Q710	K7	R731	K3
C761	K10	Q711	K5	R732	K7
C762	K15	Q712	L9	R733	K4
C763	L15	Q713	K3	R734	K9
C801	G6	Q714	K7	R737	K5
C802	I2	Q715	M4	R738	K9
C803	I4	Q716	M8	R739	K3
C804	G7	Q717	M5	R740	K7
C805	I9	Q718	M9	R741	M4
C806	I11	Q719	M3	R742	M9
C807	G15	Q720	M7	R743	L4
C808	G14	Q721	M5	R744	L8
C809	I14	Q722	M10	R745	L9
C810	I14	Q723	M3	R746	M8
C811	E9	Q724	M7	R747	K4
C812	E9	Q751	J12	R748	K8
C813	D7	Q752	J14	R749	L5
C814	D7	Q753	K12	R750	L9
C815	G14	Q754	K14	R751	L3
C816	G14	Q755	J12	R752	L8
C817	H13	Q756	K14	R753	L4
C818	G13	Q757	K12	R754	L9
C819	D6	Q758	M13	R755	L2
C820	C6	Q759	M14	R756	L6
C821	C3	Q760	M12	R757	J2
C822	C3	Q761	M14	R758	J6
C823	D3	Q762	M12	R759	L3
C824	D3	Q801	E9	R760	L8
C825	D7	Q802	C9	R761	J5
C826	C8	Q803	C5	R762	K10
C827	D3	Q804	B5	R763	K6
C828	B3	Q805	E5	R764	K10
C829	D3	RN01	K5	R765	K11
DN01	F10	RN02	L10	R766	K11
DN02	F13	RN03	L5	R767	J12
DN03	F14	RN04	L10	R768	J12
DN04	B13	RN05	K5	R769	J13
DN07	K5	RN06	K10	R770	J14
DN08	K10	RN07	K5	R771	J14
DN09	F10	RN08	K10	R772	K3
DN51	F14	RN10	F8	R773	J11
DN52	K14	RN11	H8	R774	J12
D701	K3	RN12	F9	R775	K13
D702	K8	RN13	G10	R776	K14
D703	K3	RN14	G10	R777	K14
D704	K8	RN15	G8	R778	K13
D705	K4	RN16	F9	R779	K12
D706	K9	RN20	F9	R780	K12
D707	K3	RN21	F8	R781	K13
D708	K8	RN22	G9	R783	K14
D709	L4	RN23	F12	R784	K12
D710	L9	RN24	F12	R785	M14
D711	L3	RN25	E15	R786	L13
D712	L8	RN26	E15	R787	M13
D715	K12	RN27	C14	R788	K13
D752	K12	RN28	C13	R789	L14
D753	K13	RN30	D11	R790	L12
D754	K12	RN31	D11	R791	L13
D755	L13	RN32	C11	R792	L11
D756	L12	RN33	A12	R793	L11
D801	I6	RN35	B12	R794	L12
D802	I7	RN36	F9	R795	J14
D803	H14	RN41	K2	R796	K15
D804	H14	RN42	K7	R797	K14
D805	C3	RN43	M5	R798	K8
D806	C3	RN44	M9	R799	K13

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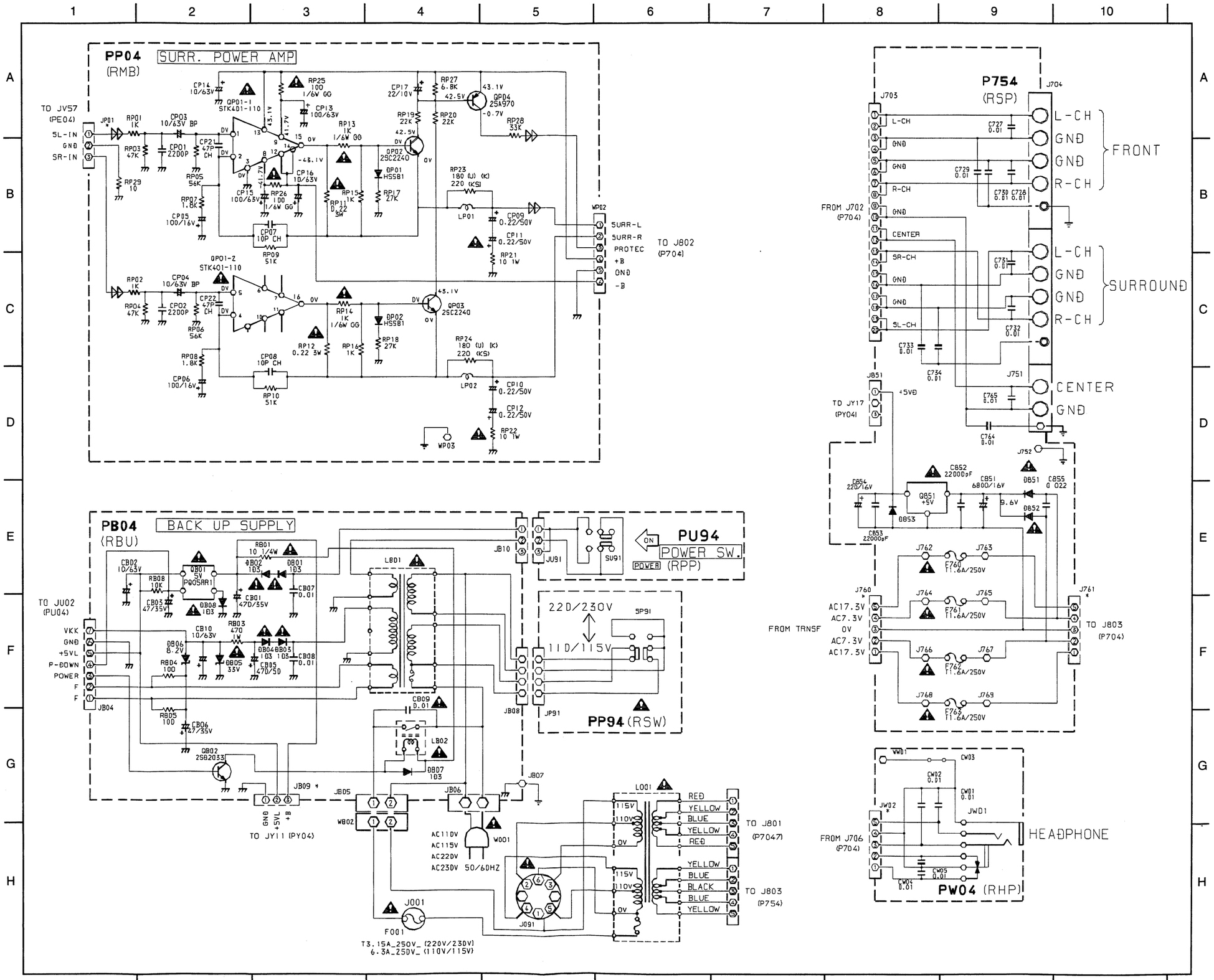
CIRCUIT DIAGRAM

CB01	F2	QB01	E2
CB02	E1	QB02	G2
CB03	F2	QP01	A2
CB05	F3	QP01	C2
CB06	G2	QP02	B4
CB07	E3	QP03	C4
CB08	F3	QP04	A5
CB09	F4	Q851	E9
CB10	F2	RB01	E3
CP01	B2	RB03	F2
CP02	C2	RB04	F2
CP03	A2	RB05	G2
CP04	C2	RB08	E2
CP05	B2	RP01	A1
CP06	D2	RP02	C1
CP07	B3	RP03	B2
CP08	C3	RP04	C2
CP09	B5	RP05	B2
CP10	D5	RP06	C2
CP11	B5	RP07	B2
CP12	D5	RP08	C2
CP13	A3	RP09	B3
CP14	A2	RP10	D3
CP15	B3	RP11	B3
CP16	B3	RP12	C3
CP17	A4	RP13	A3
CP21	B2	RP14	C3
CP22	C2	RP15	B3
CW01	G9	RP16	C3
CW02	G9	RP17	B4
CW05	H9	RP18	C4
C727	A9	RP19	A4
C728	B9	RP20	A4
C729	B9	RP21	C5
C730	B9	RP22	C5
C731	C9	RP23	B4
C732	C9	RP24	C4
C733	C9	RP25	A3
C734	C9	RP26	B3
C764	D9	RP27	A4
C765	D9	RP28	A5
C851	E9	RP29	B1
C852	E9	SP91	F6
C853	E9	SU91	E6
C854	E9	W001	H5
C855	E9		
F001	H4		
F760	E9		
F761	F9		
F762	F9		
F763	F9		
DB01	E3		
DB02	E3		
DB03	F3		
DB04	F3		
DB05	F2		
DB06	F2		
DB07	G4		
DB08	F2		
DP01	B4		
DP02	C4		
D851	E10		
D852	E10		
D853	E8		
JB04	F1		
JB05	G3		
JB06	G4		
JB07	J4		
JB08	F5		
JB09	G3		
JB10	E5		
JP01	A1		
JP91	F5		
JU91	E5		
JW01	G9		
JW02	G8		
J001	H4		
J091	H5		
J703	A8		
J704	A10		
J751	D9		
J752	D10		
J760	F8		
J761	F10		
J762	E9		
J763	E9		
J764	F9		
J765	F9		
J766	F9		
J767	F9		
J768	F9		
J769	F9		
J851	D8		
LB01	E4		
LB02	G4		
LP01	B4		
LP02	D4		
L001	G6		



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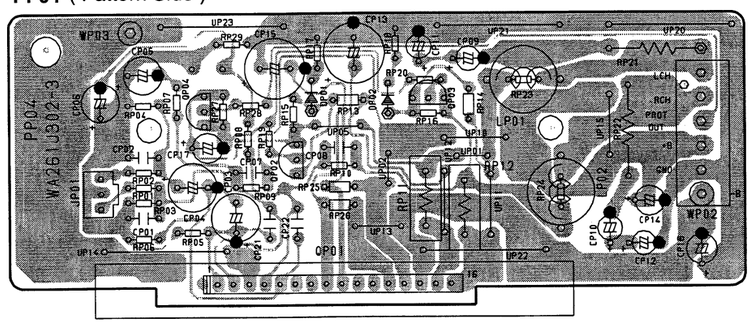
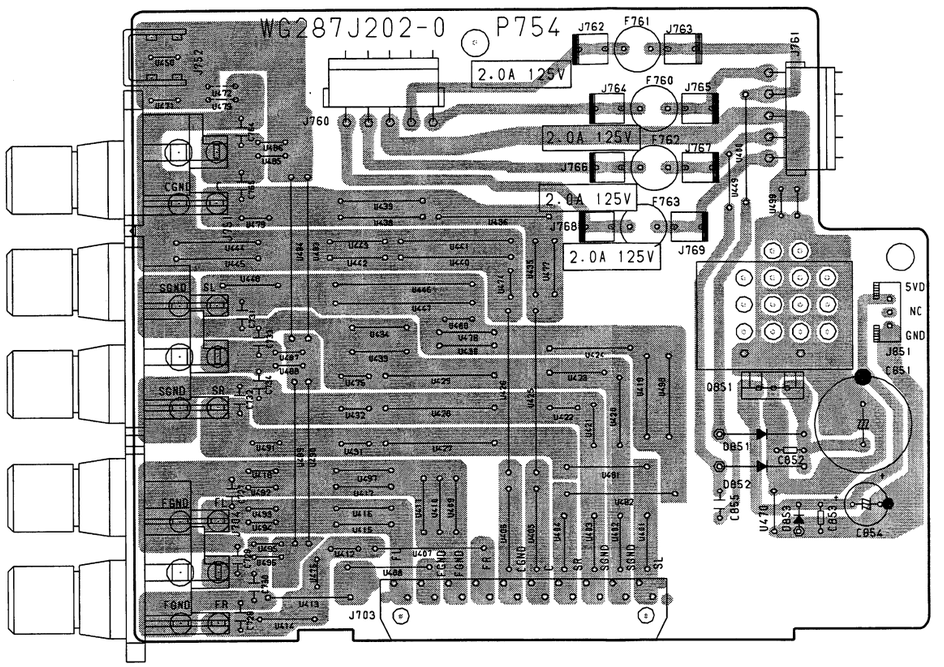
PRINTED CIRCUIT BOARD

CB01	H2	CP01	C2	CP10	C6	CP22	C4	C732	E9	C855	F16	DB05	J2	JB04	J1	JW01	J15	J763	B15	LB02	H2	Q851	E16	RP04	B2	RP13	B4	RP22	B6	SU91	J9
CB02	H1	CP02	C2	CP11	B5	CW01	J17	C733	D12	F760	B15	DB06	J2	JB05	I6	JW02	I17	J764	B15	LP01	B5	RB01	F3	RP05	C3	RP14	B5	RP23	B6		
CB03	G1	CP03	C2	CP12	C7	CW02	I17	C734	E12	F761	B15	DB07	F3	JB06	H5	J703	F13	J765	B15	LP02	C6	RB03	H2	RP06	C2	RP15	B4	RP24	C6		
CB05	I1	CP04	C3	CP13	B4	CW05	J16	C764	B12	F762	C15	DB08	J1	JB07	J6	J704	F12	J766	C15	QB01	G1	RB04	J2	RP07	B3	RP16	B5	RP25	C4		
CB06	G2	CP05	B2	CP14	C7	C727	A9	C765	C12	F763	C15	DP01	B4	JB08	I5	J751	C12	J767	C15	QB02	F2	RB05	K2	RP08	B3	RP17	B4	RP26	C4		
CB07	G2	CP06	B2	CP15	B3	C728	B9	C851	E17	DB01	G2	DP02	B4	JB09	I1	J752	B11	J768	C15	QP01	C4	RB08	H1	RP09	C3	RP18	B4	RP27	B3		
CB08	I2	CP07	C3	CP16	C7	C729	B9	C852	E16	DB02	G2	D851	E16	JB10	J3	J760	B12	J769	C15	QP02	C4	RP01	C2	RP10	C4	RP19	B3	RP28	B3		
CB09	H3	CP08	C4	CP17	C3	C730	B9	C853	F16	DB03	I2	D852	E16	JP91	J13	J761	B16	J851	D17	QP03	B5	RP02	C2	RP11	C5	RP20	B5	RP29	B3		
CB10	J2	CP09	B5	CP21	C3	C731	C9	C854	F17	DB04	I2	D853	F16	JU91	I9	J762	B15	LB01	I3	QP04	B3	RP03	C2	RP12	C5	RP21	B7	SP91	J13		

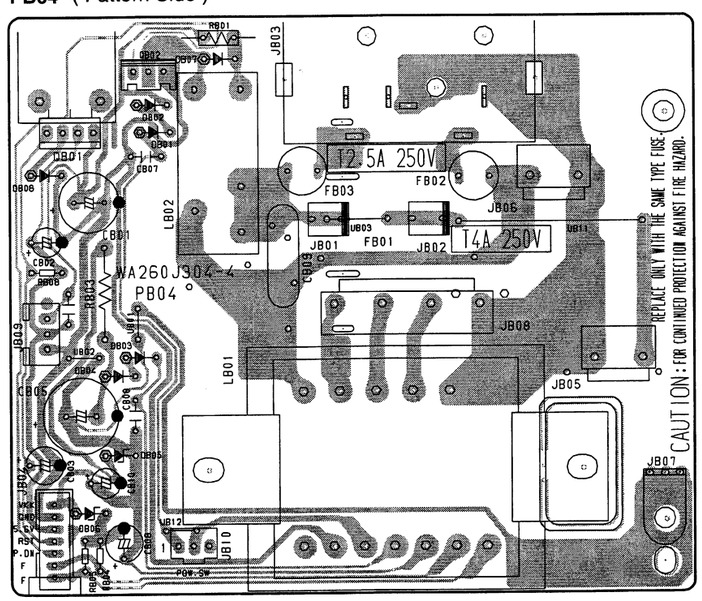
PP04 (Pattern Side)



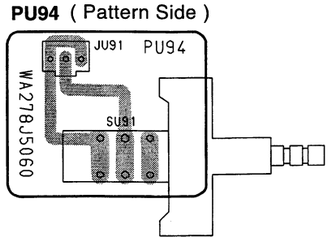
P754 (Pattern Side)



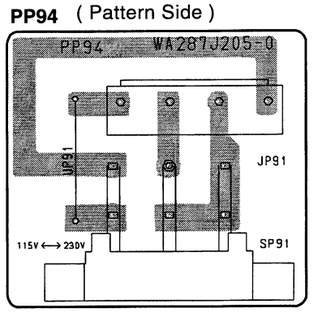
PB04 (Pattern Side)


T2.5A 250V
T4A 250V
WA260J304-4
PB04
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD. REPLACE ONLY WITH THE SAME TYPE FUSE.

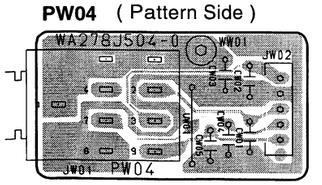
PU94 (Pattern Side)



PP94 (Pattern Side)



PW04 (Pattern Side)



PRINTED CIRCUIT BOARD

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P604

P604

CD01	B5	C652	L5	RD64	E7		
CD02	B5	C653	L6	RK01	G8		
CD03	A6	C654	M4	RK02	H8		
CD04	B6	C655	D2	RK03	G7		
CD05	B6	C656	J5	RK04	H7		
CD06	B6	C657	I5	RK05	G7		
CD07	C6	C658	B4	RK06	H7		
CD08	B6	C659	D4	RK07	G7		
CD09	C6	C660	C2	RK08	H7		
CD10	B6	C661	C3	RK11	G7		
CD11	C7	C662	B3	RK12	H7		
CD12	B7	C663	B2	RK13	H6		
CD13	C7	C664	C5	RK14	H6		
CD14	B7	C665	D3	RK15	H6		
CD15	C8	C671	I8	RK16	H6		
CD16	B8	C673	I8	RK17	H6		
CD17	B7	C675	I8	RK18	H6		
CD18	B7	C677	C8	RK19	H6		
CD31	C5	C678	A8	RK20	H6		
CD32	D5	C679	B8	RK21	H6		
CD33	C5	C680	A8	RK22	I5		
CD34	C6	C681	C8	RK25	H5		
CD35	C6	C682	A8	RK26	H5		
CD36	C6	C689	L3	RK27	H5		
CD37	D6	C690	L2	RK28	G6		
CD38	D6	C691	M3	RR01	L7		
CD39	D6	C692	M3	RR02	L7		
CD40	D6	C693	L3	RR03	K6		
CD41	D7	C694	J4	RR04	J7		
CD42	D7	C695	I1	RR05	J7		
CD43	E7	C696	J1	RR06	J6		
CD44	C7	C697	J1	RR07	J6		
CD45	D7	C698	J1	RR08	J6		
CD46	D7	C699	J1	RR09	L7		
CD47	D7	D601	H1	R601	J1		
CD48	D7	D631	H4	R602	H2		
CD51	E5	JR01	M8	R603	H3		
CD52	F5	JR02	M6	R604	H2		
CD53	E6	J601	D8	R605	H2		
CD54	E6	J602	L1	R606	I3		
CD55	E6	J651	A5	R607	I3		
CD56	E6	L601	I8	R608	I4		
CD57	F6	L603	D8	R609	H3		
CD58	E6	L604	B8	R610	H3		
CD59	F6	L605	I4	R611	I2		
CD60	E6	L631	G5	R612	I2		
CD61	F7	L651	F8	R621	J5		
CD62	E7	L652	F8	R622	I5		
CD63	F7	L653	F8	R623	J5		
CD64	E7	L654	F8	R624	I5		
CD65	E8	L655	F8	R631	J4		
CD66	F8	L656	G8	R632	J4		
CD67	F7	L659	F8	R633	J4		
CD68	F7	L660	E8	R634	J5		
CK01	G7	L671	B4	R635	G5		
CK02	H7	L672	B4	R636	G5		
CK03	G7	L673	B4	R637	G5		
CK04	H7	L674	B4	R638	E5		
CK05	G7	L675	B5	R651	K5		
CK06	H7	L676	B5	R652	J6		
CK07	H6	L691	L4	R653	J5		
CK08	H7	QD01	B5	R654	K6		
CK09	G6	QD02	B7	R681	L4		
CK10	H7	QD31	D5	R691	L2		
CK11	G6	QD32	D7	R692	L2		
CK12	I6	QD51	F6	R693	K4		
CK13	H6	QD52	F7	R694	J3		
CK14	H6	QD53	G7	R695	J3		
CK15	H6	QD54	G7	R696	L2		
CK16	H6	QK01	H5	R697	J3		
CK17	H6	QK02	H7	R698	J3		
CK18	H6	QR01	K7	X651	L5		
CK19	I6	QR02	J7	X691	L3		
CK20	G6	Q601	H2				
CK21	G6	Q602	G3				
CK22	G6	Q603	G2				
CK23	I6	Q604	G3				
CK24	H5	Q631	F4				
CK25	I5	Q651	L6				
CR01	L6	Q653	K5				
CR02	L7	Q654	D1				
CR03	M5	Q655	J5				
CR04	K7	Q656	B4				
CR05	K7	Q657	C2				
CR06	K6	Q658	C4				
CR07	K7	Q659	B2				
CR08	K6	Q660	B1				
CR09	K6	Q661	D4				
CR11	J6	Q662	C1				
C601	G1	Q663	D2				
C602	H1	Q691	J2				
C603	J1	RD01	C7				
C604	H1	RD02	B7				
C605	H1	RD03	C7				
C606	H4	RD04	B7				
C607	I2	RD05	C7				
C608	I2	RD06	B7				
C609	H3	RD07	C7				
C610	H3	RD08	B7				
C611	H3	RD09	C7				
C612	H4	RD10	D7				
C613	H4	RD31	D7				
C614	G3	RD32	D7				
C615	G2	RD33	E7				
C616	G2	RD34	D7				
C617	E3	RD35	D7				
C618	E2	RD36	D7				
C619	E2	RD37	E7				
C620	I3	RD38	C7				
C621	I3	RD39	E7				
C631	G4	RD40	C7				
C632	G4	RD51	F7				
C633	G4	RD52	E7				
C634	G5	RD53	F7				
C635	F5	RD54	E7				
C636	F4	RD55	F7				
C637	F4	RD56	E7				
C638	G4	RD57	E7				
C639	E3	RD58	F8				
C640	E3	RD59	F7				
C641	G6	RD60	F8				
C642	G5	RD61	F7				
C643	H4	RD62	G7				
C651	K4	RD63	F7				

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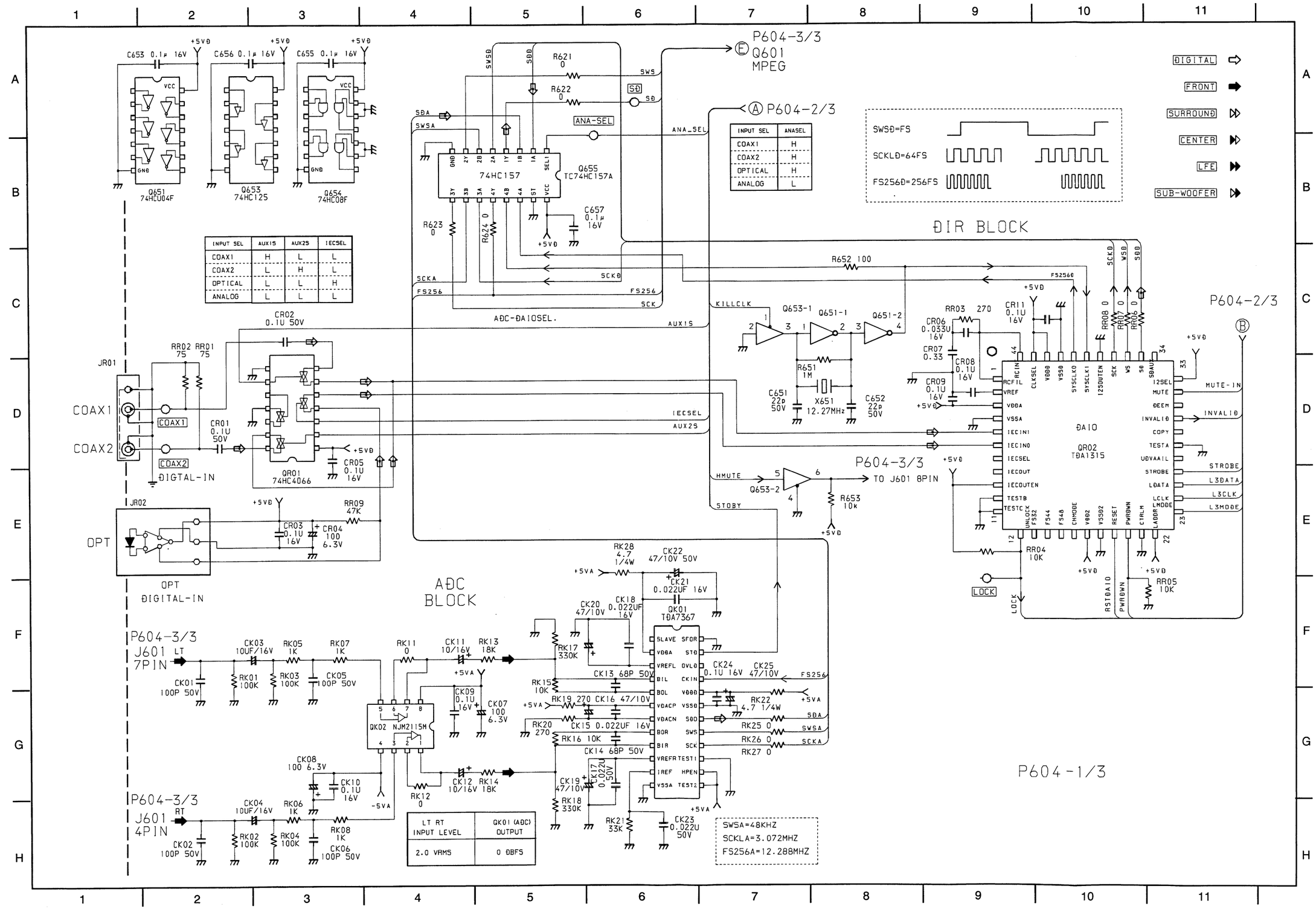
CIRCUIT DIAGRAM

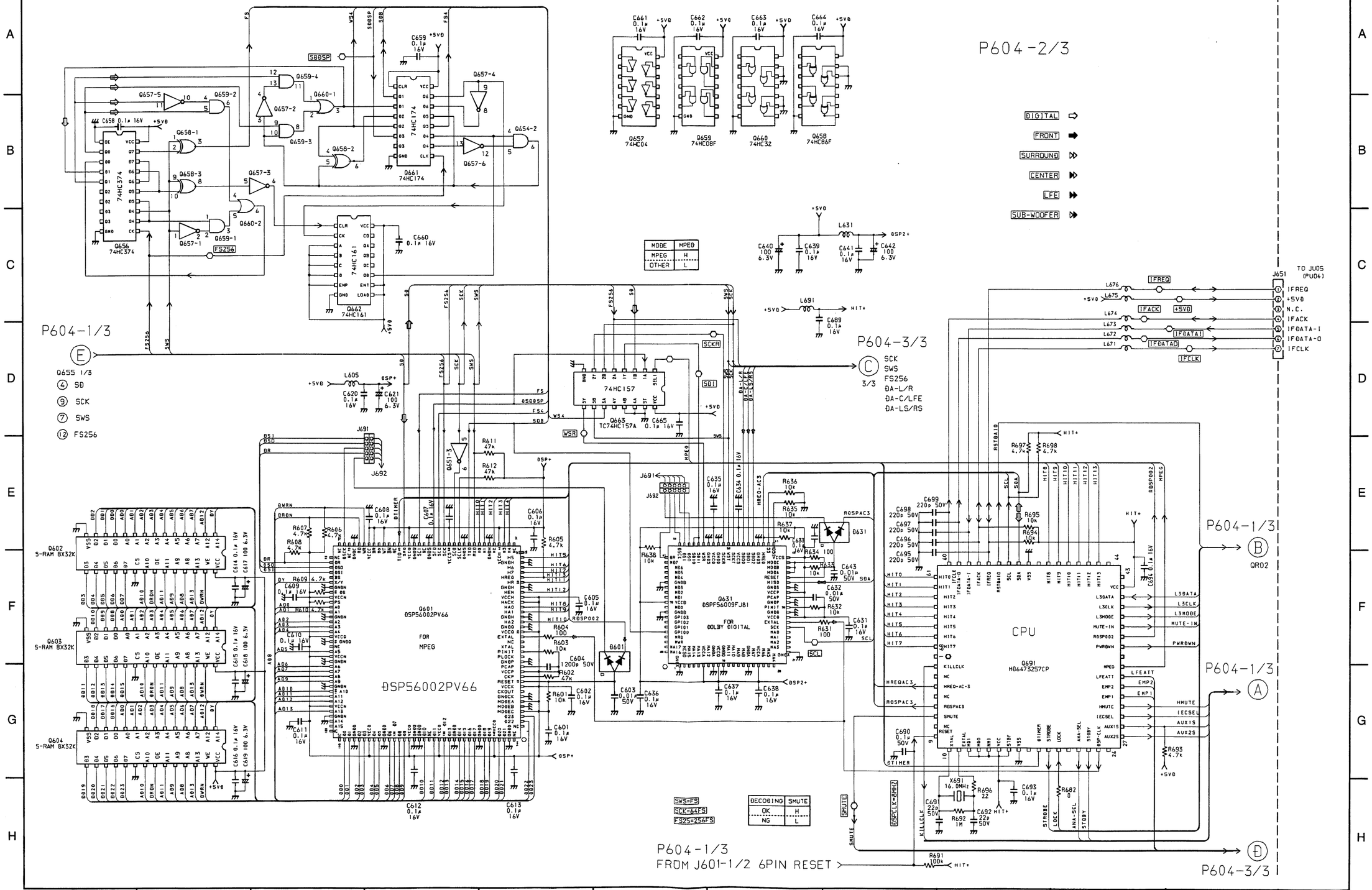
CK01	F2	CK06	H3	CK11	F4	CK16	J6	CK21	F6	CR01	D2	CR06	C9	C651	D7	C657	B5	QK02	J4	Q653	B3	RK01	F2	RK06	H3	RK13	F5	RK18	H5	RK25	G7	RR02	D2	RR07	C10	R623	B4	X651	D8
CK02	H2	CK07	G5	CK12	J4	CK17	J6	CK22	E6	CR02	C3	CR07	C9	C652	D8	JR01	D1	QR01	D3	Q653	C7	RK02	H2	RK07	F3	RK14	G5	RK19	G5	RK26	G7	RR03	C9	RR08	C10	R624	B5		
CK03	F2	CK08	G3	CK13	J6	CK18	F6	CK23	H6	CR03	E3	CR08	D9	C653	A2	JR02	E1	QR02	D10	Q653	E7	RK03	F3	RK08	H3	RK15	F5	RK20	G5	RK27	G7	RR04	E9	RR09	E3	R651	D8		
CK04	H2	CK09	G4	CK14	J6	CK19	J5	CK24	H7	CR04	E3	CR09	D9	C655	A3	J651	C11	Q651	B2	Q654	B3	RK04	H3	RK11	F4	RK16	G5	RK21	H6	RK28	E6	RR05	F11	R621	A5	R652	C8		
CK05	F3	CK10	G3	CK15	J6	CK20	F6	CK25	H7	CR05	D3	CR11	C9	C656	A2	QK01	F6	Q651	C8	Q655	B5	RK05	F3	RK12	G4	RK17	F5	RK22	G7	RR01	D2	RR06	C10	R622	A5	R653	E8		



4-19

CIRCUIT DIAGRAM

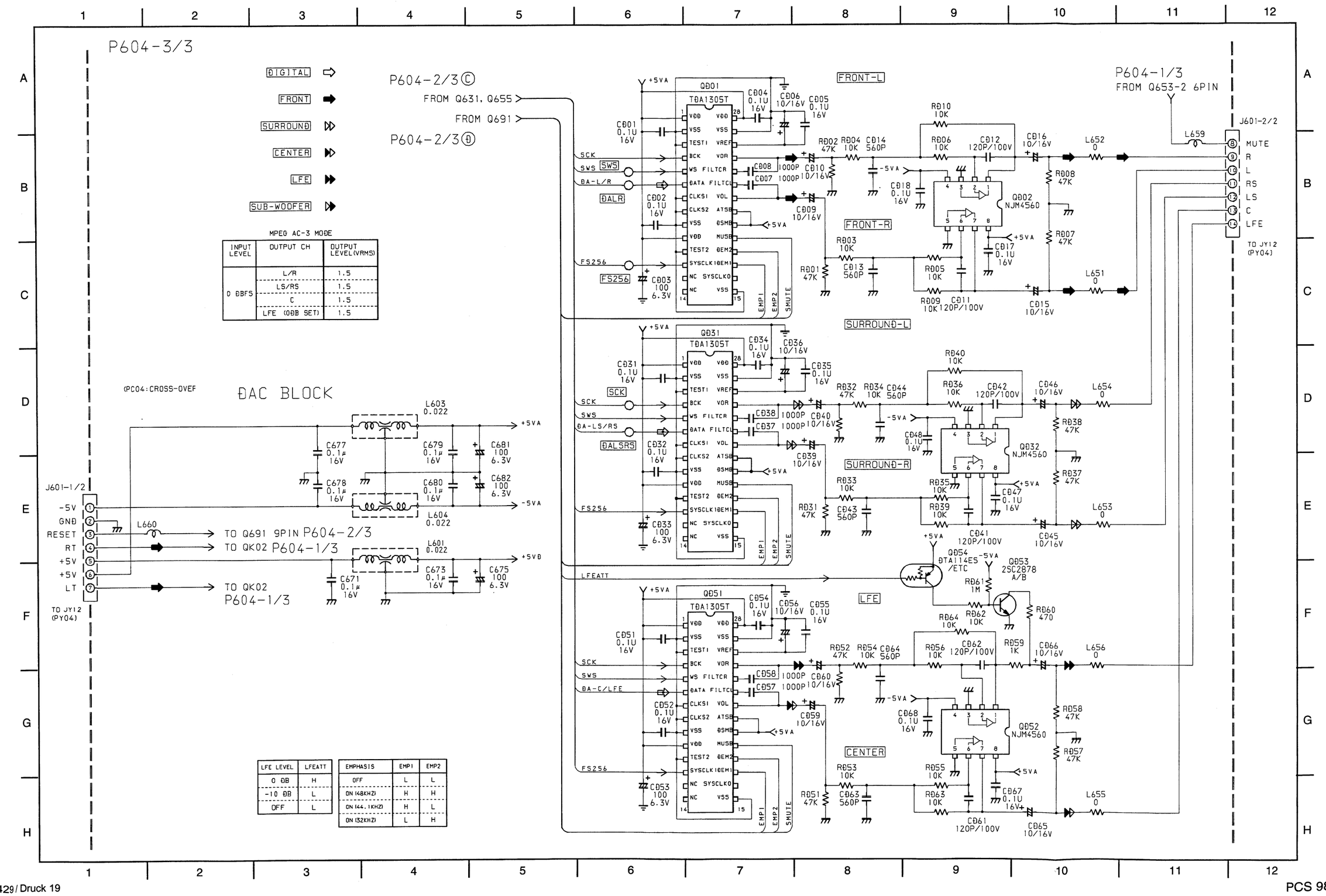
C601	G5	C606	E5	C611	G3	C616	G2	C621	D4	C635	E7	C640	C7	C659	F8	C664	A7	C692	H9	C697	E8	Q601	F4	Q651	E4	Q657	B5	Q659	A3	Q661	B4	R602	G5	R607	E3	R612	E5	R635	E7	R692	H9	R697	E9
C602	G5	C607	E4	C612	H4	C617	F2	C631	F8	C636	G6	C641	C8	C660	C4	C665	D6	C693	H9	C698	E8	Q602	E1	Q654	B5	Q657	B6	Q659	B3	Q662	C3	R603	F5	R608	E3	R631	F7	R636	E7	R693	G11	R698	E9
C603	G6	C608	E4	C613	H5	C618	G2	C632	F8	C637	G7	C642	C8	C661	A6	C689	C8	C694	F10	C699	E8	Q603	F1	Q657	A5	Q657	C2	Q659	B6	Q663	D6	R604	F5	R609	F3	R632	F7	R637	E7	R694	E9	X691	H9
C604	G5	C609	F3	C614	F2	C619	G2	C633	E7	C638	G7	C643	F8	C662	A6	C690	G8	C695	A4	D601	F6	Q604	G1	Q657	B2	Q658	B2	Q660	B7	Q691	F9	R605	E5	R610	F3	R633	F7	R638	F6	R695	E9		
C605	F5	C610	F3	C615	G2	C620	D3	C634	E7	C639	C7	C658	B1	C663	A7	C691	H9	C696	E8	D631	E8	Q631	F7	Q657	B3	Q658	B7	Q660	C2	R601	G5	R606	E3	R611	E5	R634	F7	R691	H8	R696	H9		



4-20

CIRCUIT DIAGRAM

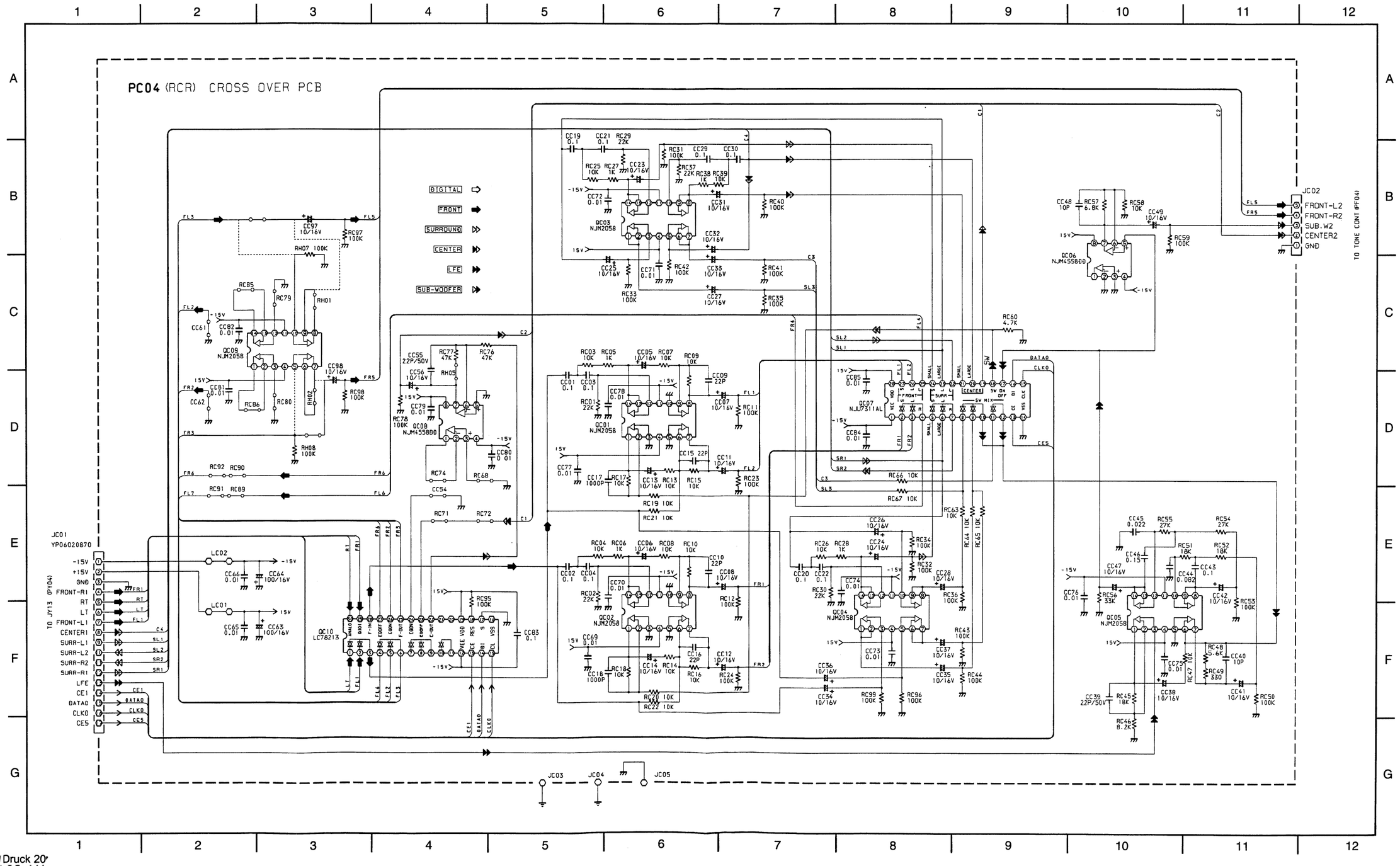
CD01	A6	CD07	B7	CD13	C8	CD31	D6	CD37	D7	CD43	E8	CD51	F6	CD57	G7	CD63	H8	J601	E1	L653	E10	QD01	A7	QD53	F10	RD05	C9	RD31	E8	RD37	E10	RD53	H8	RD59	F10
CD02	B6	CD08	B7	CD14	B8	CD32	B6	CD38	D7	CD44	D8	CD52	G6	CD58	G7	CD64	G8	L601	E4	L654	D10	QD02	B10	QD54	F9	RD06	B9	RD32	D8	RD38	D10	RF54	F8	RD60	F10
CD03	C6	CD09	B8	CD15	C10	CD33	E6	CD39	D8	CD45	E10	CD53	H6	CD59	G8	CD65	H10	L603	D4	L655	H10	QD31	D7	RD01	C8	RD07	B10	RD33	E8	RD39	E9	RD55	H9	RD61	F9
CD04	A7	CD10	B8	CD16	B10	CD34	D7	CD40	D8	CD46	D10	CD54	F7	CD60	G8	CD66	F10	L604	E4	L656	F10	QD32	D10	RD02	B8	RD08	B10	RD34	D8	RD40	D9	RD56	F9	RD62	F9
CD05	A8	CD11	C9	CD17	C9	CD35	D8	CD41	E9	CD47	E9	CD55	F8	CD61	H9	CD67	H9	L651	C10	L659	B11	QD51	F7	RD03	C8	RD09	C9	RD35	E9	RD51	H8	RD57	G10	RD63	H9
CD06	A7	CD12	B9	CD18	B9	CD36	D7	CD42	D9	CD48	D9	CD56	F7	CD62	F9	CD68	G9	L652	B10	L660	E2	QD52	G10	RD04	B8	RD10	A9	RD36	D9	RD52	F8	RD58	G10	RD64	F9



4-21

CIRCUIT DIAGRAM

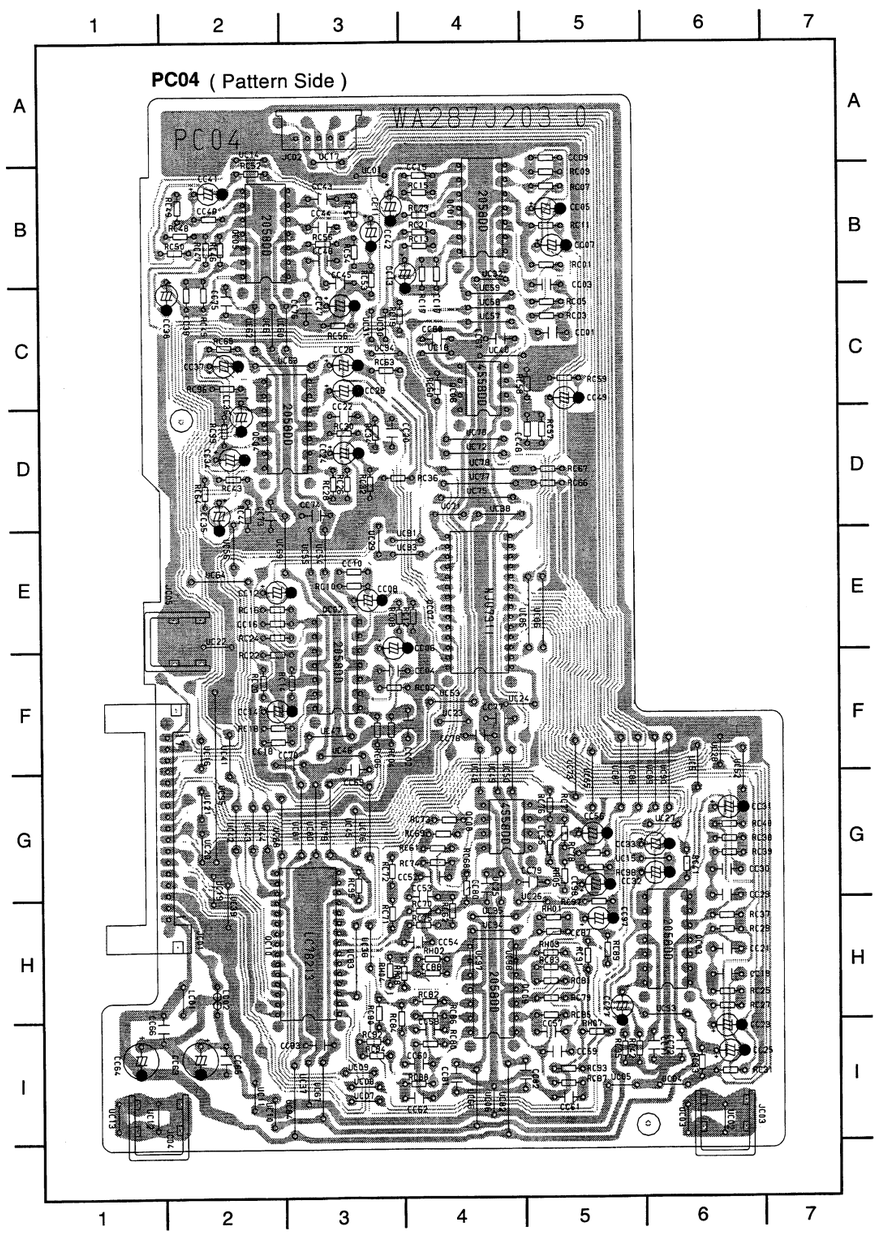
CC01	D5	CC09	D6	CC17	D5	CC25	C6	CC33	C6	CC41	F11	CC49	B10	CC68	D6	CC97	B3	QC02	F6	QC10	F3	RC08	E6	RC16	F6	RC24	F7	RC32	E8	RC40	B7	RC48	F11	RC56	E10	RC66	D8	RC98	D3
CC02	E5	CC10	E6	CC18	F5	CC26	E8	CC34	F7	CC42	E11	CC55	C6	CC69	F5	CC98	D3	QC03	B6	RC01	D5	RC09	C6	RC17	D6	RC25	B5	RC33	C6	RC41	C7	RC49	F11	RC57	B10	RC67	E8	RC99	F8
CC03	D5	CC11	D7	CC19	B5	CC27	C6	CC35	F8	CC43	E11	CC56	D4	CC70	E6	JC01	E1	QC04	F8	RC02	E5	RC10	E6	RC18	F6	RC26	E7	RC34	E8	RC42	C6	RC50	F11	RC58	B10	RC76	C4	RH07	B3
CC04	E5	CC12	F7	CC20	E7	CC28	E8	CC36	F7	CC44	E10	CC63	F3	CC71	C6	JC02	B12	QC05	F10	RC03	C5	RC11	D7	RC19	E6	RC27	B6	RC35	C9	RC43	F9	RC51	E11	RC59	B10	RC77	C4	RH08	D3
CC05	C6	CC13	D6	CC21	B5	CC29	B6	CC37	F8	CC45	E10	CC64	E3	CC72	B5	JC03	J5	QC06	C10	RC04	E5	RC12	E7	RC20	F6	RC28	E8	RC36	E9	RC44	F9	RC52	E11	RC60	C9	RC78	D4		
CC06	E6	CC14	F6	CC22	E7	CC30	B7	CC38	F10	CC46	E10	CC65	F2	CC73	F8	JC04	J5	QC07	D8	RC05	C6	RC13	D6	RC21	E6	RC29	B6	RC37	B6	RC45	F10	RC53	E13	RC63	E9	RC95	E4		
CC07	D7	CC15	D6	CC23	B6	CC31	B6	CC39	F10	CC47	E10	CC66	E2	CC74	E8	JC05	J6	QC08	D4	RC06	E6	RC14	F6	RC22	F6	RC30	E7	RC38	B6	RC46	G10	RC54	E11	RC64	E9	RC96	F8		
CC08	E7	CC16	F6	CC24	E8	CC32	B6	CC40	F11	CC48	B10	CC67	D5	CC83	F5	QC01	D6	QC09	C2	RC07	C6	RC15	D6	RC23	D7	RC31	B6	RC39	B6	RC47	F11	RC55	E10	RC65	E9	RC97	B3		



PRINTED CIRCUIT BOARD

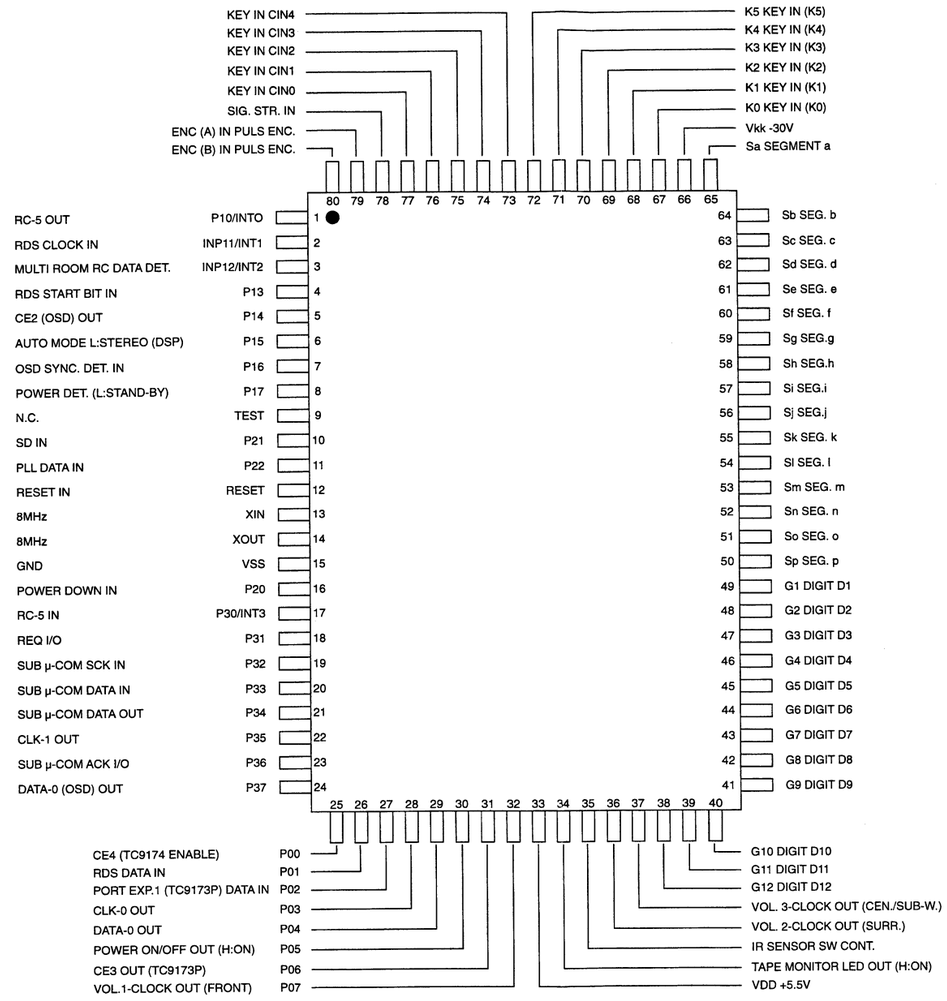
CC01	C5	CC19	H6	CC37	C2	CC66	I1	QC02	E3	RC10	E3	RC28	D3	RC46	B2	RC66	D5
CC02	F4	CC20	D3	CC38	C2	CC67	C4	QC03	H6	RC11	B5	RC29	H6	RC47	B2	RC67	D5
CC03	C5	CC21	H6	CC39	C2	CC68	C4	QC04	D2	RC12	E4	RC30	A3	RC48	B2	RC76	G5
CC04	F4	CC22	D3	CC40	B2	CC69	F3	QC05	B2	RC13	B4	RC31	I6	RC49	B2	RC77	G5
CC05	B5	CC23	I6	CC41	B2	CC70	F3	QC06	C4	RC14	F3	RC32	D3	RC50	B2	RC78	G5
CC06	E4	CC24	D3	CC42	B3	CC71	I6	QC07	E4	RC15	B4	RC33	I6	RC51	B3	RC95	G3
CC07	B5	CC25	I6	CC43	B3	CC72	I6	QC08	G4	RC16	E2	RC34	D3	RC52	B2	RC96	C2
CC08	E3	CC26	C3	CC44	B3	CC73	D2	QC09	H4	RC17	C4	RC35	I5	RC53	B3	RC97	G5
CC09	A5	CC27	H5	CC45	B3	CC74	D3	QC10	H2	RC18	F2	RC36	D4	RC54	B3	RC98	G5
CC10	E3	CC28	C3	CC46	B3	CC83	I3	RC01	B5	RC19	C4	RC37	H6	RC55	B3	RC99	D2
CC11	B3	CC29	H6	CC47	C3	CC97	H5	RC02	F4	RC20	F2	RC38	G6	RC56	C3	RH07	I5
CC12	E2	CC30	G6	CC48	D5	CC98	G5	RC03	C5	RC21	B4	RC39	G6	RC57	D5	RH08	H3
CC13	B3	CC31	G6	CC49	C5	JC01	H2	RC04	F3	RC22	F2	RC40	G6	RC58	C5		
CC14	F2	CC32	G6	CC55	G5	JC02	A3	RC05	C5	RC23	B4	RC41	G6	RC59	C5		
CC15	B4	CC33	G6	CC56	G5	JC03	I6	RC06	F3	RC24	B2	RC42	I5	RC60	C4		
CC16	E2	CC34	D2	CC63	I2	JC04	I2	RC07	B5	RC25	H6	RC43	D2	RC63	C3		
CC17	B4	CC35	D2	CC64	I1	JC05	E2	RC08	E3	RC26	D3	RC44	D2	RC64	D2		
CC18	F2	CC36	D2	CC65	I2	QC01	B4	RC09	B5	RC27	H6	RC45	C2	RC65	C2		

PC04 (Pattern Side)

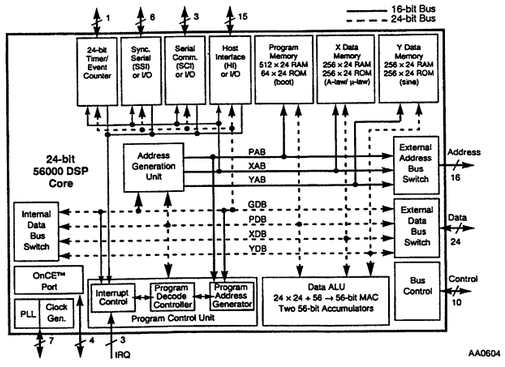


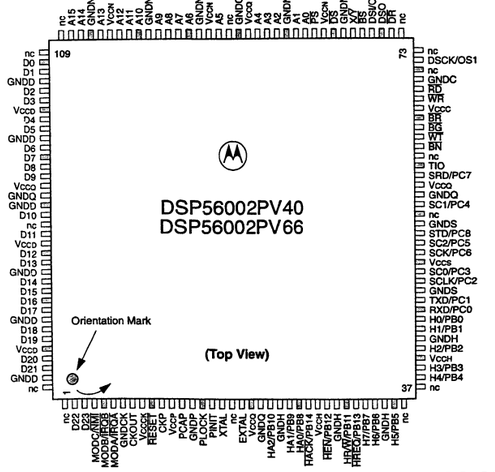
IC BLOCK DIAGRAM

QU01 : TMP87CP71F


KEY IN CIN4
KEY IN CIN3
KEY IN CIN2
KEY IN CIN1
KEY IN CIN0
SIG. STR. IN
ENC (A) IN PULS ENC.
ENC (B) IN PULS ENC.
K5 KEY IN (K5)
K4 KEY IN (K4)
K3 KEY IN (K3)
K2 KEY IN (K2)
K1 KEY IN (K1)
K0 KEY IN (K0)
Vkk -30V
Sa SEGMENT a
80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65
RC-5 OUT P10/INT0 1
RDS CLOCK IN INP11/INT1 2
MULTI ROOM RC DATA DET. INP12/INT2 3
RDS START BIT IN P13 4
CE2 (OSD) OUT P14 5
AUTO MODE L:STEREO (DSP) P15 6
OSD SYNC. DET. IN P16 7
POWER DET. (L:STAND-BY) P17 8
N.C. TEST 9
SD IN P21 10
PLL DATA IN P22 11
RESET IN RESET 12
8MHz XIN 13
8MHz XOUT 14
GND VSS 15
POWER DOWN IN P20 16
RC-5 IN P30/INT3 17
REQ I/O P31 18
SUB µ-COM SCK IN P32 19
SUB µ-COM DATA IN P33 20
SUB µ-COM DATA OUT P34 21
CLK-1 OUT P35 22
SUB µ-COM ACK I/O P36 23
DATA-0 (OSD) OUT P37 24
64 Sb SEG. b
63 Sc SEG. c
62 Sd SEG. d
61 Se SEG. e
60 Sf SEG. f
59 Sg SEG.g
58 Sh SEG.h
57 Si SEG.i
56 Sj SEG.j
55 Sk SEG. k
54 Sl SEG. l
53 Sm SEG. m
52 Sn SEG. n
51 So SEG. o
50 Sp SEG. p
49 G1 DIGIT D1
48 G2 DIGIT D2
47 G3 DIGIT D3
46 G4 DIGIT D4
45 G5 DIGIT D5
44 G6 DIGIT D6
43 G7 DIGIT D7
42 G8 DIGIT D8
41 G9 DIGIT D9
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
CE4 (TC9174 ENABLE) P00
RDS DATA IN P01
PORT EXP.1 (TC9173P) DATA IN P02
CLK-0 OUT P03
DATA-0 OUT P04
POWER ON/OFF OUT (H:ON) P05
CE3 OUT (TC9173P) P06
VOL.1-CLOCK OUT (FRONT) P07
G10 DIGIT D10
G11 DIGIT D11
G12 DIGIT D12
VOL. 3-CLOCK OUT (CEN./SUB-W.)
VOL. 2-CLOCK OUT (SURR.)
IR SENSOR SW CONT.
TAPE MONITOR LED OUT (H:ON)
VDD +5.5V

Q601 : DSP56002PV66

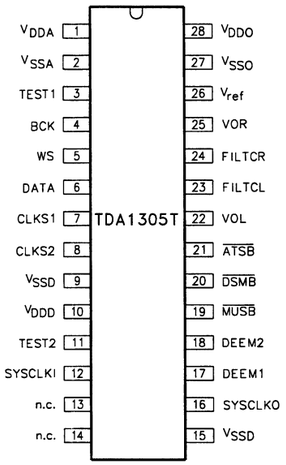




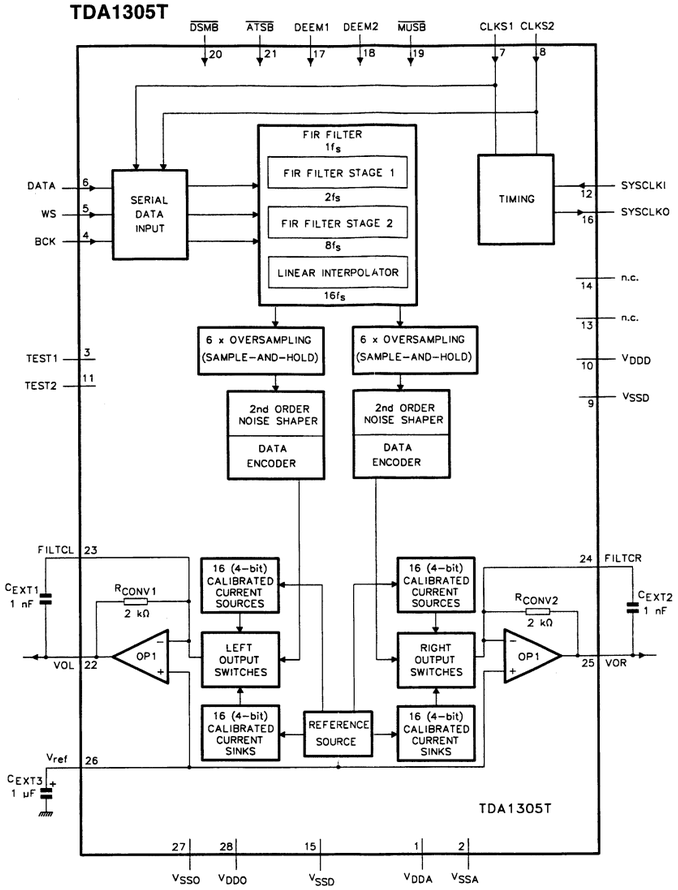
4-24

QD01, QD31, QD51 : TDA1305T

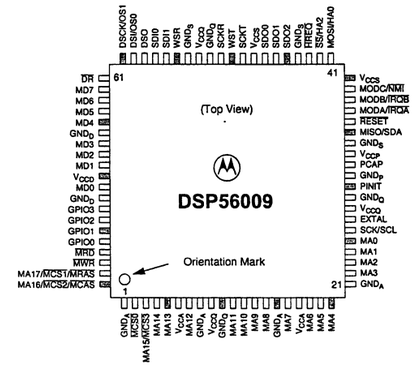
SYMBOL	PIN	DESCRIPTION
V_{DDA}	1	analog supply voltage
V_{SSA}	2	analog ground
TEST1	3	test input; pin should be connected to ground (internal pull-down resistor)
BCK	4	bit clock input
WS	5	word select input
DATA	6	data input
CLKS1	7	clock selection 1 input
CLKS2	8	clock selection 2 input
V_{SSD}	9	digital ground
V_{DDD}	10	digital supply voltage
TEST2	11	test input; pin should be connected to ground (internal pull-down resistor)
SYSCLKI	12	system clock input
n.c.	13	not connected (this pin should be left open-circuit)
n.c.	14	not connected (this pin should be left open-circuit)
V_{SSD}	15	digital ground
SYSCLKO	16	system clock output
DEEM1	17	de-emphasis on/off; f_{DEEM} 32 kHz, 44 kHz and 48 kHz
DEEM2	18	de-emphasis on/off; f_{DEEM} 32 kHz, 44 kHz and 48 kHz
$\overline{MUSB}$	19	mute input (active LOW)
$\overline{DSMB}$	20	double-speed mode input (active LOW)
$\overline{ATSB}$	21	12 dB attenuation input (active LOW)
VOL	22	left channel output
FILTCL	23	capacitor for left channel 1st order filter function should be connected between pins 22 and 23
FILTCR	24	capacitor for right channel 1st order filter function should be connected between pins 25 and 24
VOR	25	right channel output
V_{ref}	26	internal reference voltage for output channels ($0.5V_{DD}$)
V_{SSO}	27	operational amplifier ground
V_{DDO}	28	operational amplifier supply voltage

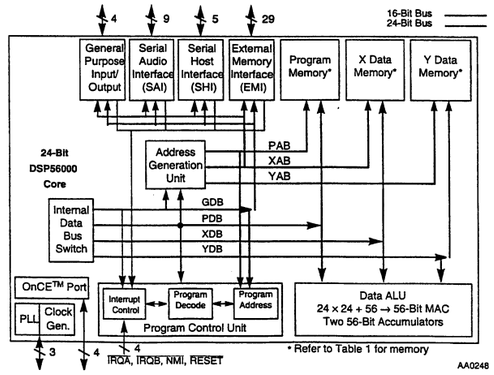


TDA1305T

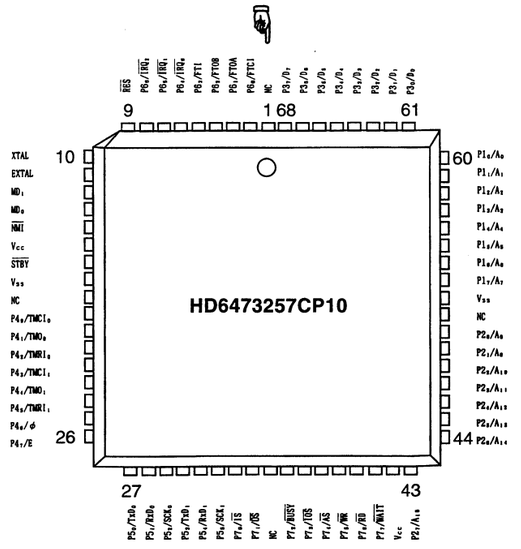


Q631 : DSP56009





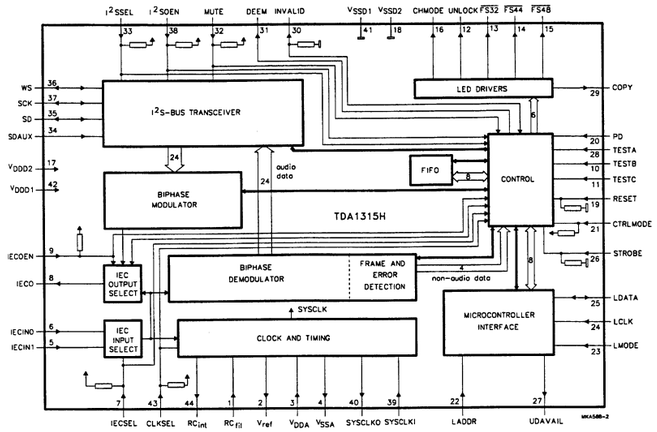
Q691 : HD6473257CP10

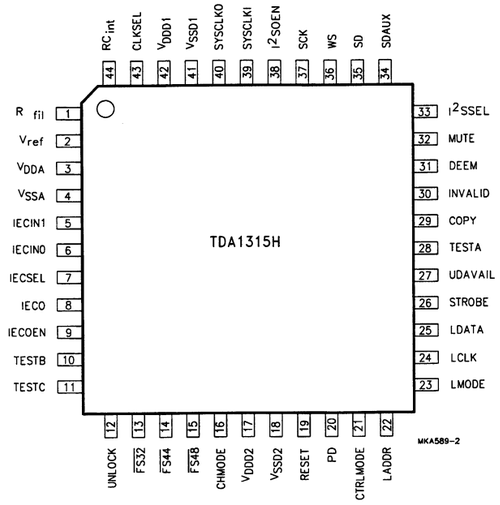


Q691 : HD6473257CP Pin Assignment

No.	Signal name	I/O	Description	No.	Signal name	I/O	Description
1	n.c	-		35	n.c.	-	
2	KILLCLK	o	control X651 generate (L : stop)	36	PWRDWN	o	control the QR02's standby (H : standby)
3	n.c.	-		37	RDSP002	o	reset for Q601 (L : reset)
4	HREQ AC3	o	request signal output to Q631	38	MUTEIN	o	control the QR02's mute (L : mute)
5	n.c.	-		39	L3MODE	o	control the QR02's mode
6	RDSP AC3	o	reset for Q631 (L : reset)	40	L3CLK	o	interface clock output for QR02
7	SMUTE	o	mute for DAC (L : mute)	41	L3DATA	i	interface data i/o for QR02
8	n.c.	-		42	VCC	-	Power supply (+5VD)
9	RESET	i	reset input (L : reset)	43	n.c.	-	
10	XTAL	o	system clock (16MHz) generated	44	n.c.	-	
11	EXTAL	i	system clock (16MHz) generated	45	HIT13	o	interface request signal for Q601
12	MD1	i	CPU mode : Fixed the High	46	HIT12	o	interface enable output to Q601
13	MD0	i	CPU mode : Fixed the High	47	HIT11	o	interface read / write output to Q601
14	NM1	i	CPU mode : Fixed the High	48	HIT10	o	interface address output to Q601
15	VCC	-	Power supply (+5VD)	49	HIT9	o	interface address output to Q601
16	STBY	i	CPU moder : Fixed the High	50	HIT8	o	interface address output to Q601
17	VSS	-	GND	51	n.c.	-	
18	n.c.	-		52	VSS	-	GND
19	DTMER	i	timer signal input from Q601	53	SDA	io	interface data for Q631
20	STROBE	o	strobe for QR02's register (H : active)	54	SCL	o	interface clock output to Q631
21	LOCK	i	QR02's PLL lock (H : locked, L: unlock)	55	RSTDAIO	o	reset for QR02 (H : reset)
22	n.c.	-		56	IFREQ	io	interface request signal for main CPU
23	ANA-SEL	o	select data (H : QR02, L : QK01)	57	IFACK	io	interface acknowledge signal for main CPU
24	STDBY	o	control QK01's standby (L : standby)	58	IFDATAI	i	interface data input from main CPU
25	DSPCLK	o	system clock output for DSP (8 MHz)	59	IFDATAO	o	interface data output to main CPU
26	n.c.	-		60	IFCLK	o	interface clock output for main CPU
27	AUX1S	o	select coaxial 1 input (H : active)	61	HIT0	io	interface data i/o for Q601
28	AUX2S	o	select coaxial 2 input (H : active)	62	HIT1	io	interface data i/o for Q601
29	IECSEL	o	select optical input (H : active)	63	HIT2	io	interface data i/o for Q601
30	HMUTE	o	mute control for Tr (H : mute)	64	HIT3	io	interface data i/o for Q601
31	EMP1	o	control the de-emphasis at DAC	65	HIT4	io	interface data i/o for Q601
32	EMP2	o	control the de-emphasis at DAC	66	HIT5	io	interface data i/o for Q601
33	LFEATT	o	attenuate the LFE output level (L : -10dB)	67	HIT6	io	interface data i/o for Q601
34	MPEG	o	select data MPEG or other (H : MPEG)	68	HIT7	io	interface data i/o for Q601

QR02 : TDA1315H



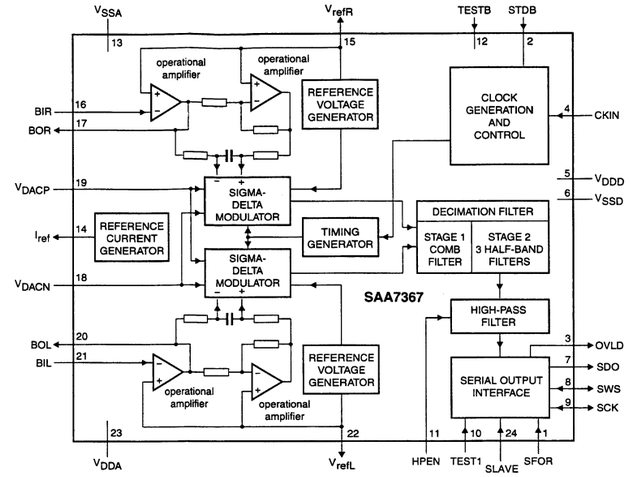


TDA1315H

SYMBOL	PIN	PADCELL	DESCRIPTION
RC_{fil}	1	E029	PLL loop filter input
V_{ref}	2	E029	decoupling internal reference voltage output
V_{DDA}	3	E008	analog supply voltage
V_{SSA}	4	E004	analog ground
IECIN1	5	E007	high sensitivity IEC input
IECIN0	6	IPP04	TTL level IEC input
IECSEL	7	IUP04	select IEC input 0 or 1 (0 = IECIN0; 1 = IECIN1); this input has an internal pull-up resistor
IECO	8	OPFH3	digital audio output for optical and transformer link
IECOEN	9	IUP04	digital audio output enable (0 = enabled; 1 = disabled/3-state); this input has an internal pull-up resistor
TESTB	10	IPP04	enable factory test input (0 = normal application; 1 = scan mode)
TESTC	11	IPP04	enable factory test input (0 = normal application; 1 = observation outputs)
$\overline{UNLOCK}$	12	OPP41A	PLL out-of-lock (0 = not locked; 1 = locked); this output can drive an LED
$\overline{FS32}$	13	OPP41A	indicates sample frequency = 32 kHz (active LOW); this output can drive an LED
$\overline{FS44}$	14	OPP41A	indicates sample frequency = 44.1 kHz (active LOW); this output can drive an LED
$\overline{FS48}$	15	OPP41A	indicates sample frequency = 48 kHz (active LOW); this output can drive an LED
CHMODE	16	OPP41A	use of channel status block (0 = professional use; 1 = consumer use); this output can drive an LED
V_{DDD2}	17	E008	digital supply voltage 2
V_{SSD2}	18	E009	digital ground 2
RESET	19	IDP09	initialization after power-on, requires only an external capacitor connected to V_{DDD}; this is a Schmitt-trigger input with an internal pull-down resistor
PD	20	IPP04	enable power-down input in the standby mode (0 = normal application; 1 = standby mode)
CTRLMODE	21	IUP04	select microcontroller/stand-alone mode (0 = microcontroller; 1 = stand-alone); this input has an internal pull-up resistor
LADDR	22	IPP04	microcontroller interface address switch input (0 = 000001; 1 = 000010)
LMODE	23	IPP09	microcontroller interface mode line input
LCLK	24	IPP09	microcontroller interface clock line input
LDATA	25	IOF24	microcontroller interface data line input/output
STROBE	26	IDP04	strobe for control register (active HIGH); this input has an internal pull-down resistor
UDAVAIL	27	OPF23	synchronization for output user data (0 = data available; 1 = no data)
TESTA	28	IPP04	enable factory (scan) test input (0 = normal application; 1 = test clock enable)
COPY	29	OPP41A	copyright status bit (0 = copyright asserted; 1 = no copyright asserted); this output can drive an LED
INVALID	30	IOD24	validity of audio sample input/output (0 = valid sample; 1 = invalid sample); this pin has an internal pull-down resistor
DEEM	31	OPF23	pre-emphasis output bit (0 = no pre-emphasis; 1 = pre-emphasis)
MUTE	32	IUP04	audio mute input (0 = permanent mute; 1 = mute on receive error); this pin has an internal pull-up resistor
I²SSEL	33	IUP04	select auxiliary input or normal input in transmit mode
SDAUX	34	IPP04	auxiliary serial data input; I²S-bus
SD	35	IOF24	serial audio data input/output; I²S-bus
WS	36	IOF24	word select input/output; I²S-bus
SCK	37	IOF29	serial audio clock input/output; I²S-bus
I²SOEN	38	IUP04	serial audio output enable (0 = enabled; 1 = disabled/3-state); this input has an internal pull-up resistor
SYSCLKI	39	IPP09	system clock input (transmit mode)
SYSCLKO	40	OPFA3	system clock output (receive mode)
V_{SSD1}	41	E009	digital ground 1
V_{DDD1}	42	E008	digital supply voltage 1
CLKSEL	43	IUP04	select system clock (0 = $384f_s$; 1 = $256f_s$); this input has an internal pull-up resistor
RC_{int}	44	E029	integrating capacitor output

4-25

QK01 : SAA7367

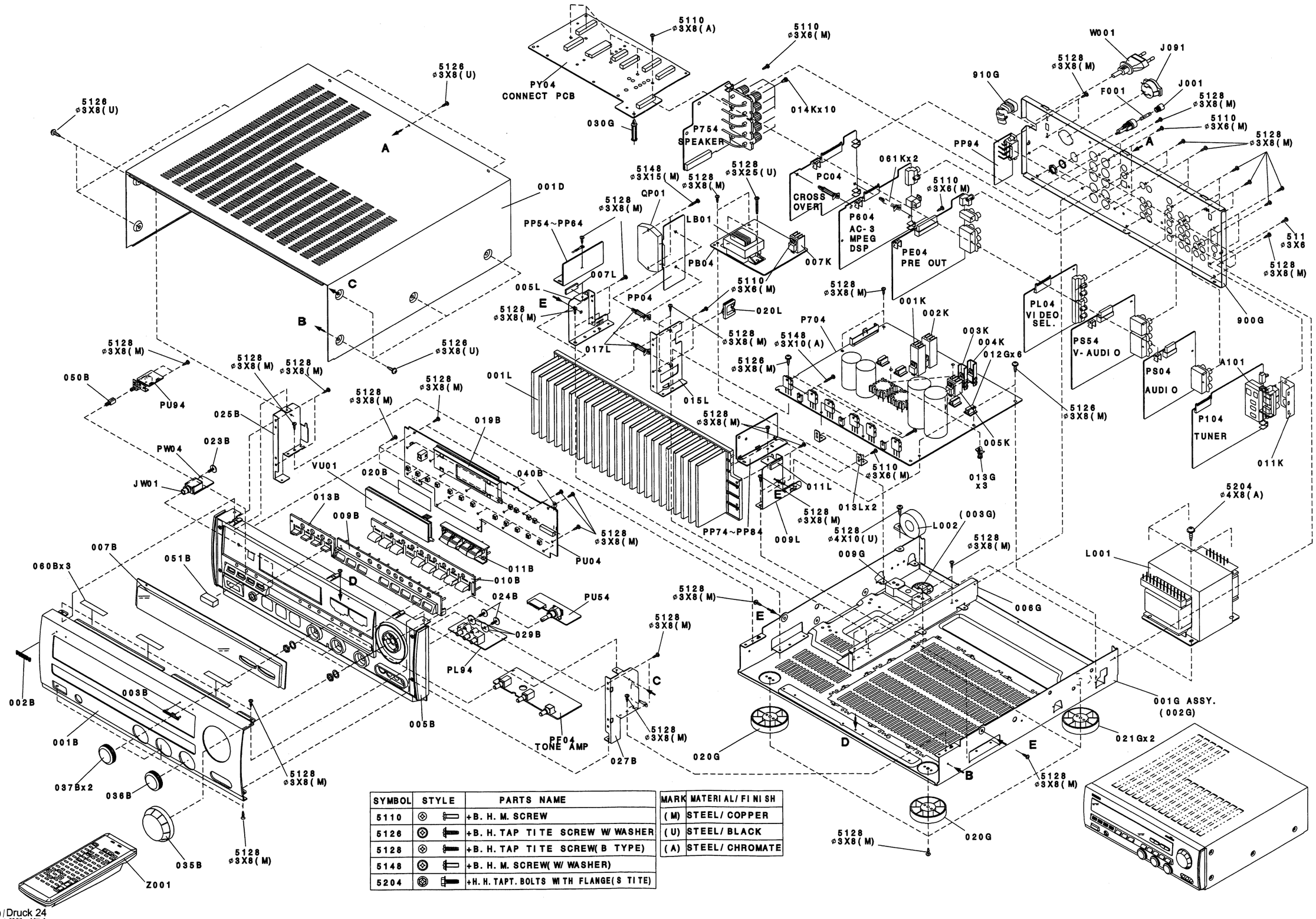


SAA7367

SYMBOL	PIN	DESCRIPTION
SFOR	1	TTL level input; in normal mode this input selects the serial interface output format; output format is selected as follows: SFOR = HIGH selects Format 1 SFOR = LOW selects Format 2 (similar to I²S)
STDB	2	schmitt-trigger input; in normal mode, this input is used to select standby mode: STDB = HIGH selects normal operation STDB = LOW selects standby mode (low power consumption)
OVLD	3	TTL level output; in normal mode this output indicates whether the internal digital signal is within 1 dB of maximum; if so, the output will go HIGH for 131072 clock cycles (approximately 11 ms); in standby mode this output is forced LOW
CKIN	4	CMOS level input; system clock input; nominally clocked at $256f_s$
V_{DDD}	5	digital supply voltage (4.5 to 5.5 V)
V_{SSD}	6	digital ground
SDO	7	TTL level output (3-state); in normal mode this pin outputs data from the serial interface; in standby mode, this output is high impedance
SWS	8	TTL level input/output; serial interface word select signal; in master mode (SLAVE = LOW), this pin outputs the serial interface word select signal; in slave mode (SLAVE = HIGH), this pin is the word select input to the serial interface; in standby mode (STDB = LOW) this pin is always an input (high impedance); for polarity: see Table 1
SCK	9	TTL level input/output; in master mode (SLAVE = LOW) the pin outputs the serial interface bit clock; in slave mode (SLAVE = HIGH) this pin is the input for the external bit clock; data on SDO is clocked out on the HIGH-to-LOW transition of SCK; the data is valid on the LOW-to-HIGH transition
TEST1	10	Test 1; TTL level input with internal pull-down; in slave mode (slave = HIGH), this pin is used to select extra serial interface formats (see Table 2)
HPEN	11	TTL level input; this input is used to enable the internal high-pass filter when HIGH; in scan-test mode (TESTB = LOW and TEST1 = LOW) this pin functions as 'scan chain c' input
TESTB	12	Test B; CMOS level input with internal pull-up; in normal applications, this input should be left HIGH
V_{SSA}	13	analog ground; this pin is internally connected to V_{SS} via the on-chip substrate contacts
I_{ref}	14	current reference generator output; 33 kΩ in parallel with 22 nF is connected from this pin to V_{SSA}
V_{refR}	15	right channel analog reference output voltage ($\frac{1}{2}V_{DDA}$)
BIR	16	buffer operational amplifier inverting input for right channel
BOR	17	buffer operational amplifier output for right channel
V_{DACN}	18	negative 1-bit DAC reference voltage input, connected to 0 V
V_{DACP}	19	positive 1-bit DAC reference voltage input, connected to +5 V
BOL	20	buffer operational amplifier output for left channel
BIL	21	buffer operational amplifier inverting input for left channel
V_{refL}	22	left channel analog reference output voltage ($\frac{1}{2}V_{DDA}$)
V_{DDA}	23	analog supply voltage (4.5 to 5.5 V)

5-1

EXPLODED VIEWS



SYMBOL	STYLE	PARTS NAME
5110		+B. H. M. SCREW
5126		+B. H. TAP TITE SCREW W/ WASHER
5128		+B. H. TAP TITE SCREW(B TYPE)
5148		+B. H. M. SCREW(W/ WASHER)
5204		+H. H. TAPT. BOLTS WITH FLANGE(S TITE)

MARK	MATERIAL/ FINISH
(M)	STEEL/ COPPER
(U)	STEEL/ BLACK
(A)	STEEL/ CHROMATE

MECHANICAL PARTS LIST

001B	4822 459 04877		FRONT ALMI PANEL
002B	4822 454 40107		PHILIPS BADGE
003B	4822 454 13262		MATCH LINE BADGE
005B	4822 459 04878		FRONT MOLD CHASSIS
007B	4822 450 10432		WINDOW
009B	4822 466 11772		BUTTON ESCUTCHEON
010B	4822 410 11608		FUNCTION HINGE BUTTON
011B	4822 410 11609		TUNING BUTTON
013B	4822 410 10642		MODE BUTTON
035B	4822 410 11611		MAIN VOL KNOB
036B	4822 410 11612		TONE VOL KNOB
037B	4822 410 11613		TONE VOL KNOB
050B	4822 404 21012		POWER BUTTON JOINT
051B	4822 410 62744		POWER SW BUTTON
020G	4822 462 42159		LEG,FRONT
021G	4822 462 11001		LEG,REAR
910G	4822 532 60948		MAINS CODE BUSH 2271
F001	4822 070 33152	⚠	FUSE 3.15A 250V (at Mains Voltage 220V/230V)
	4822 070 36302	⚠	FUSE 6.3A 250V BS (at Mains Voltage 110V/115V)
J001	4822 256 30233	⚠	JACK,FUSE HOLDER
J091	4822 272 10382		VOLTAGE SELECTOR
L001	4822 146 10923	⚠	MAINS TRANSF 4 VOLTAGE
L002	4822 529 10357		FERRITE RING,ESD-R-38B
W001	4822 321 11343	⚠	MAINS CORD
001T	4822 736 15873		USER GUIDE
Z001	4822 219 10425		REMOTE COMMANDER RC980FR
Z004	4822 157 63083		LOOP ANT LA-700HB

ELECTRICAL PARTS LIST

PB04-BACK-UP CIRCUIT BOARD

MISCELLANEOUS

LB01	4822 146 10924	⚠	MAINS TRANSF.115 230V
LB02	4822 280 80773	⚠	RELAY VS24MB-NR TV-8 SEMKO LISTED

CAPACITORS

CB01	4822 124 41182		470µF		35V
CB02	4822 124 41134		10µF	20%	63V
CB03	4822 124 23905		47µF	20%	35V
CB05	4822 124 41184		470µF	50V	
CB06	4822 124 23905		47µF	20%	35V
CB07	4822 122 30043		0.01µF	+80%-20%	50V
CB08	4822 122 30043		0.01µF	+80%-20%	50V
CB09	4822 122 33276	⚠	0.01µF	20% SPERK KILLER	
CB10	4822 124 41134		10µF	20%	63V

RESISTORS

RB01	4822 052 10109	⚠	10Ω	5%	1/4W
RB03	4822 053 10471		470Ω	5%	1W
RB04	4822 116 52175		100Ω	5%	1/6W
RB05	4822 116 52175		100Ω	5%	1/6W
RB08	4822 116 83864		10kΩ	5%	1/6W

DIODES

DB01	4822 130 82421	1D3 1A 200V
DB02	4822 130 82421	1D3 1A 200V
DB03	4822 130 82421	1D3 1A 200V
DB04	4822 130 82421	1D3 1A 200V
DB05	4822 130 81729	ZENNER MTZJ33D 33V
DB06	4822 130 80273	ZENNER NTJ8.2C 8.2V
DB07	4822 130 82421	1D3 1A 200V
DB08	4822 130 82421	1D3 1A 200V

TRANSISTOR & INTEGRATED CIRCUIT

QB01	4822 209 31927	⚠	PQ05RR1 5V 1A W/RESET
QB02	4822 130 62335	⚠	2SD2033 E 120V 1.8W

PC04-CROSSOVER CIRCUIT BOARD

MISCELLANEOU

JC01	4822 267 10718	PLUG TSK-B17P-A1	

CAPACITORS

CC01	5322 121 42386	0.1µF	5%	50V
CC02	5322 121 42386	0.1µF	5%	50V
CC03	5322 121 42386	0.1µF	5%	50V
CC04	5322 121 42386	0.1µF	5%	50V
CC05	4822 124 21894	10µF		16V
CC06	4822 124 21894	10µF		16V
CC07	4822 124 21894	10µF		16V
CC08	4822 124 21894	10µF		16V
CC09	4822 126 10362	22pF	5%	
CC10	4822 126 10362	22pF	5%	
CC11	4822 124 21894	10µF		16V
CC12	4822 124 21894	10µF		16V
CC13	4822 124 21894	10µF		16V
CC14	4822 124 21894	10µF		16V
CC15	4822 126 10362	22pF	5%	
CC16	4822 126 10362	22pF	5%	
CC17	4822 122 33639	0.001µF	10%	50V
CC18	4822 122 33639	0.001µF	10%	50V
CC19	5322 121 42386	0.1µF	5%	50V
CC20	5322 121 42386	0.1µF	5%	50V
CC21	5322 121 42386	0.1µF	5%	50V
CC22	5322 121 42386	0.1µF	5%	50V
CC23	4822 124 21894	10µF		16V
CC24	4822 124 21894	10µF		16V
CC25	4822 124 21894	10µF		16V
CC26	4822 124 21894	10µF		16V
CC27	4822 124 21894	10µF		16V
CC28	4822 124 21894	10µF		16V
CC29	5322 121 42386	0.1µF	5%	50V
CC30	5322 121 42386	0.1µF	5%	50V
CC31	4822 124 21894	10µF		16V
CC32	4822 124 21894	10µF		16V
CC33	4822 124 21894	10µF		16V
CC34	4822 124 21894	10µF		16V
CC35	4822 124 21894	10µF		16V
CC36	4822 124 21894	10µF		16V
CC37	4822 124 21894	10µF		16V
CC38	4822 124 21894	10µF		16V
CC39	4822 126 10362	22pF	5%	50V
CC40	4822 122 33792	10pF	5%	
CC41	4822 124 21894	10µF		16V
CC42	4822 124 21894	10µF		16V
CC43	5322 121 42386	0.1µF	5%	50V
CC44	4822 121 70195	0.082µF	5%	50V
CC45	4822 121 41856	0.022µF	5%	50V
CC46	4822 121 41854	0.15µF	5%	50V
CC47	4822 124 21894	10µF		16V
CC48	4822 122 33792	10pF	5%	
CC49	4822 124 21894	10µF		16V
CC55	4822 126 10362	22pF	5%	
CC56	4822 124 21894	10µF		16V
CC63	4822 124 41139	100µF		16V
CC64	4822 124 41139	100µF		16V
CC65	4822 122 30043	0.01µF	+80%-20%	50V
CC66	4822 122 30043	0.01µF	+80%-20%	50V
CC67	4822 122 30043	0.01µF	+80%-20%	50V
CC68	4822 122 30043	0.01µF	+80%-20%	50V
CC69	4822 122 30043	0.01µF	+80%-20%	50V
CC70	4822 122 30043	0.01µF	+80%-20%	50V
CC71	4822 122 30043	0.01µF	+80%-20%	50V
CC72	4822 122 30043	0.01µF	+80%-20%	50V

ELECTRICAL PARTS LIST

CC73	4822 122 30043	0.01µF	+80%-20%	50V
CC74	4822 122 30043	0.01µF	+80%-20%	50V
CC83	4822 122 40617	0.1µF		50V
CC97	4822 124 21894	10µF	20%	16V
CC98	4822 124 21894	10µF	20%	16V

RESISTORS

RC01	4822 116 52257	22kΩ	5%	1/6W
RC02	4822 116 52257	22kΩ	5%	1/6W
RC03	4822 116 83864	10kΩ	5%	1/6W
RC04	4822 116 83864	10kΩ	5%	1/6W
RC05	4822 050 11002	1kΩ	5%	1/6W
RC06	4822 050 11002	1kΩ	5%	1/6W
RC07	4822 116 83864	10kΩ	5%	1/6W
RC08	4822 116 83864	10kΩ	5%	1/6W
RC09	4822 116 83864	10kΩ	5%	1/6W
RC10	4822 116 83864	10kΩ	5%	1/6W
RC11	4822 116 52234	100kΩ	5%	1/6W
RC12	4822 116 52234	100kΩ	5%	1/6W
RC13	4822 116 83864	10kΩ	5%	1/6W
RC14	4822 116 83864	10kΩ	5%	1/6W
RC15	4822 116 83864	10kΩ	5%	1/6W
RC16	4822 116 83864	10kΩ	5%	1/6W
RC17	4822 116 83864	10kΩ	5%	1/6W
RC18	4822 116 83864	10kΩ	5%	1/6W
RC19	4822 116 83864	10kΩ	5%	1/6W
RC20	4822 116 83864	10kΩ	5%	1/6W
RC21	4822 116 83864	10kΩ	5%	1/6W
RC22	4822 116 83864	10kΩ	5%	1/6W
RC23	4822 116 52234	100kΩ	5%	1/6W
RC24	4822 116 52234	100kΩ	5%	1/6W
RC25	4822 116 83864	10kΩ	5%	1/6W
RC26	4822 116 83864	10kΩ	5%	1/6W
RC27	4822 050 11002	1kΩ	5%	1/6W
RC28	4822 050 11002	1kΩ	5%	1/6W
RC29	4822 116 52257	22kΩ	5%	1/6W
RC30	4822 116 52257	22kΩ	5%	1/6W
RC31	4822 116 52234	100kΩ	5%	1/6W
RC32	4822 116 52234	100kΩ	5%	1/6W
RC33	4822 116 52234	100kΩ	5%	1/6W
RC34	4822 116 52234	100kΩ	5%	1/6W
RC35	4822 116 52234	100kΩ	5%	1/6W
RC36	4822 116 52234	100kΩ	5%	1/6W
RC37	4822 116 52257	22kΩ	5%	1/6W
RC38	4822 050 11002	1kΩ	5%	1/6W
RC39	4822 116 83864	10kΩ	5%	1/6W
RC40	4822 116 52234	100kΩ	5%	1/6W
RC41	4822 116 52234	100kΩ	5%	1/6W
RC42	4822 116 52234	100kΩ	5%	1/6W
RC43	4822 116 52234	100kΩ	5%	1/6W
RC44	4822 116 52234	100kΩ	5%	1/6W
RC45	4822 116 52251	18kΩ	5%	1/6W
RC46	4822 116 52303	8.2kΩ	5%	1/6W
RC47	4822 116 83864	10kΩ	5%	1/6W
RC48	4822 116 52289	5.6kΩ	5%	1/6W
RC49	4822 116 52219	330Ω	5%	1/6W
RC50	4822 116 52234	100kΩ	5%	1/6W
RC51	4822 116 52251	18kΩ	5%	1/6W
RC52	4822 116 52251	18kΩ	5%	1/6W
RC53	4822 116 52234	100kΩ	5%	1/6W
RC54	4822 116 52264	27kΩ	5%	1/6W
RC55	4822 116 52264	27kΩ	5%	1/6W
RC56	4822 116 52234	33kΩ	5%	1/16W
RC57	4822 116 83961	6.8kΩ	5%	1/6W
RC58	4822 116 83864	10kΩ	5%	1/6W
RC59	4822 116 52234	100kΩ	5%	1/6W
RC60	4822 116 52283	4.7kΩ	5%	1/6W
RC63	4822 116 83864	10kΩ	5%	1/6W
RC64	4822 116 83864	10kΩ	5%	1/6W
RC65	4822 116 83864	10kΩ	5%	1/6W
RC66	4822 116 83864	10kΩ	5%	1/6W
RC67	4822 116 83864	10kΩ	5%	1/6W
RC76	4822 116 83884	47kΩ	5%	1/6W
RC77	4822 116 83884	47kΩ	5%	1/6W
RC78	4822 116 52234	100kΩ	5%	1/6W
RC95	4822 116 52234	100kΩ	5%	1/6W
RC96	4822 116 52234	100kΩ	5%	1/6W
RC97	4822 116 52234	100kΩ	5%	1/6W
RC98	4822 116 52234	100kΩ	5%	1/6W
RC99	4822 116 52234	100kΩ	5%	1/6W
RH07	4822 116 52234	100kΩ	5%	1/6W
RH08	4822 116 52234	100kΩ	5%	1/6W

INTEGRATED CIRCUIT

QC01	4822 209 70044	NJM2058D QUAD OP. AMP
QC02	4822 209 70044	NJM2058D QUAD OP. AMP
QC03	4822 209 70044	NJM2058D QUAD OP. AMP
QC04	4822 209 70044	NJM2058D QUAD OP. AMP
QC05	4822 209 70044	NJM2058D QUAD OP. AMP
QC06	4822 209 83631	NJM4558DD
QC07	4822 209 16149	NJU7311L ANALOG SW.
QC08	4822 209 83631	NJM4558DD
QC10	4822 209 32554	C78213

ELECTRICAL PARTS LIST

PE04-ELE. VOL CIRCUIT BOARD

MISCELLANEOUS

JV52	4822 267 41009	TERMINAL 2P RCA PIN JACK
JV53	4822 265 10681	TERMINAL YKC21-3324
JV54	4822 267 10719	JACK 30P TKC-V30X-A1
LV03	4822 526 10584	FERRITE CORE ZBF503D-00TA
LV04	4822 280 20501	RELAY MR62-24SR 24V
LV05	4822 280 20501	RELAY MR62-24SR 24V
LV06	4822 280 20501	RELAY MR62-24SR 24V
UE02	4822 526 10584	FERRITE CORE ZBF503D-00TA
UE33	4822 526 10584	FERRITE CORE ZBF503D-00TA
UE34	4822 526 10584	FERRITE CORE ZBF503D-00TA
UE79	4822 526 10584	FERRITE CORE ZBF503D-00TA

CAPACITORS

CE01	4822 124 90352	10µF	20%	16V
CE02	4822 124 90352	10µF	20%	16V
CE03	4822 124 21894	10µF		16V
CE04	4822 124 21894	10µF		16V
CE05	4822 124 21894	10µF		16V
CE06	4822 124 21894	10µF		16V
CE07	4822 124 22274	4.7µF	20%	50V
CE08	4822 124 22274	4.7µF	20%	50V
CE09	4822 124 21899	4.7µF		25V
CE10	4822 124 21899	4.7µF		25V
CE11	4822 124 21899	4.7µF		25V
CE12	4822 124 21899	4.7µF		25V
CE13	4822 124 22274	4.7µF	20%	50V
CE14	4822 124 22274	4.7µF	20%	50V
CE15	4822 124 21899	4.7µF		25V
CE16	4822 124 21899	4.7µF		25V
CE17	4822 124 21899	4.7µF		25V
CE18	4822 124 21899	4.7µF		25V
CE19	4822 124 22274	4.7µF	20%	50V
CE20	4822 124 22274	4.7µF	20%	50V
CE21	4822 124 21899	4.7µF		25V
CE22	4822 124 21899	4.7µF		25V
CE23	4822 124 21899	4.7µF		25V
CE24	4822 124 21899	4.7µF		25V
CE25	4822 124 22274	4.7µF	20%	50V
CE26	4822 124 22274	4.7µF	20%	50V
CE27	4822 124 21899	4.7µF		25V
CE28	4822 124 21899	4.7µF		25V
CE29	4822 124 21899	4.7µF		25V
CE30	4822 124 21899	4.7µF		25V
CE31	4822 124 22274	4.7µF	20%	50V
CE32	4822 124 22274	4.7µF	20%	50V
CE33	4822 124 21899	4.7µF		25V
CE34	4822 124 21899	4.7µF		25V
CE35	4822 124 21899	4.7µF		25V
CE36	4822 124 23055	22µF	20%	16V
CE41	4822 124 90352	10µF	20%	16V
CE42	4822 124 90352	10µF	20%	16V
CE43	4822 124 21894	10µF	16V	
CE44	4822 124 21894	10µF	16V	
CE45	4822 124 21894	10µF	16V	
CE46	4822 124 21894	10µF	16V	
CV80	4822 126 10408	220pF	10%	
CV81	4822 126 10408	220pF	10%	
CV82	4822 126 10408	220pF	10%	
CV83	4822 126 10408	220pF	10%	
CV84	4822 126 10408	220pF	10%	
CV85	4822 126 10408	220pF	10%	
CV89	4822 122 40617	0.1µF	+80%-20%	50V
CV91	4822 122 40617	0.1µF	+80%-20%	50V
CV94	4822 122 30043	0.01µF	+80%-20%	50V
CV96	4822 122 30043	0.01µF	+80%-20%	50V
CV97	4822 122 30043	0.01µF	+80%-20%	50V
CV98	4822 122 30043	0.01µF	+80%-20%	50V

RESISTORS

RE01	4822 116 52234	100kΩ	5%	1/6W
RE02	4822 116 52234	100kΩ	5%	1/6W
RE03	4822 116 52234	100kΩ	5%	1/6W
RE04	4822 116 52234	100kΩ	5%	1/6W
RE05	4822 116 52234	100kΩ	5%	1/6W
RE06	4822 116 52234	100kΩ	5%	1/6W
RE07	4822 116 52269	3.3kΩ	5%	1/6W
RE08	4822 116 52269	3.3kΩ	5%	1/6W
RE09	4822 116 52269	3.3kΩ	5%	1/6W
RE10	4822 116 52269	3.3kΩ	5%	1/6W
RE11	4822 116 52269	3.3kΩ	5%	1/6W
RE13	4822 116 52243	1.5kΩ	5%	1/6W
RE14	4822 116 52243	1.5kΩ	5%	1/6W
RE15	4822 116 52243	1.5kΩ	5%	1/6W
RE16	4822 116 52243	1.5kΩ	5%	1/6W
RE17	4822 116 52243	1.5kΩ	5%	1/6W
RE19	4822 116 52234	100kΩ	5%	1/6W
RE20	4822 116 52234	100kΩ	5%	1/6W
RE21	4822 116 52234	100kΩ	5%	1/6W
RE22	4822 116 52234	100kΩ	5%	1/6W
RE23	4822 116 52234	100kΩ	5%	1/6W
RE24	4822 116 52234	100kΩ	5%	1/6W
RE25	4822 116 52219	330Ω	5%	1/6W
RE26	4822 116 52219	330Ω	5%	1/6W
RE27	4822 116 52219	330Ω	5%	1/6W
RE28	4822 116 52219	330Ω	5%	1/6W
RE29	4822 116 52219	330Ω	5%	1/6W
RE30	4822 116 52219	330Ω	5%	1/6W
RE31	4822 116 52243	1.5kΩ	5%	1/6W
RE32	4822 116 52243	1.5kΩ	5%	1/6W
RE33	4822 116 52243	1.5kΩ	5%	1/6W
RE34	4822 116 52243	1.5kΩ	5%	1/6W
RE35	4822 116 52243	1.5kΩ	5%	1/6W
RE36	4822 116 52243	1.5kΩ	5%	1/6W
RE37	4822 116 52272	330kΩ	5%	1/6W
RE38	4822 116 52272	330kΩ	5%	1/6W
RE39	4822 116 52272	330kΩ	5%	1/6W
RE40	4822 116 52272	330kΩ	5%	1/6W
RE41	4822 116 52272	330kΩ	5%	1/6W
RE42	4822 116 52272	330kΩ	5%	1/6W
RE43	4822 116 52243	1.5kΩ	5%	1/6W
RE44	4822 116 52243	1.5kΩ	5%	1/6W
RE45	4822 116 52243	1.5kΩ	5%	1/6W
RE46	4822 116 52243	1.5kΩ	5%	1/6W
RE47	4822 116 52243	1.5kΩ	5%	1/6W
RE48	4822 116 52243	1.5kΩ	5%	1/6W
RE49	4822 116 52234	100kΩ	5%	1/6W
RE50	4822 116 52234	100kΩ	5%	1/6W
RE51	4822 116 52234	100kΩ	5%	1/6W
RE52	4822 116 52234	100kΩ	5%	1/6W
RE53	4822 116 52234	100kΩ	5%	1/6W
RE54	4822 116 52234	100kΩ	5%	1/6W
RE55	4822 116 52243	1.5kΩ	5%	1/6W
RE56	4822 116 52243	1.5kΩ	5%	1/6W
RE57	4822 116 52243	1.5kΩ	5%	1/6W
RE58	4822 116 52243	1.5kΩ	5%	1/6W
RE59	4822 116 52243	1.5kΩ	5%	1/6W
RE60	4822 116 52243	1.5kΩ	5%	1/6W
RE61	4822 116 52243	1.5kΩ	5%	1/6W

ELECTRICAL PARTS LIST

RE62	4822 116 52243	1.5kΩ	5%	1/6W
RE63	4822 116 52243	1.5kΩ	5%	1/6W
RE64	4822 116 52243	1.5kΩ	5%	1/6W
RE65	4822 116 52243	1.5kΩ	5%	1/6W
RE66	4822 116 52263	2.7kΩ	5%	1/6W
RE73	4822 116 52235	1MΩ	5%	1/6W
RE74	4822 116 52235	1MΩ	5%	1/6W
RE75	4822 116 52235	1MΩ	5%	1/6W
RE76	4822 116 52235	1MΩ	5%	1/6W
RV69	4822 116 83883	1MΩ	5%	1/6W
RV70	4822 116 83883	470Ω	5%	1/6W
RV71	4822 116 83883	470Ω	5%	1/6W
RV72	4822 116 83883	470Ω	5%	1/6W
RV73	4822 116 83883	470Ω	5%	1/6W
RV74	4822 116 83872	220Ω	5%	1/6W
RV75	4822 116 83884	47kΩ	5%	1/6W
RV76	4822 116 83884	47kΩ	5%	1/6W
RV77	4822 116 83884	47kΩ	5%	1/6W
RV78	4822 116 83884	47kΩ	5%	1/6W
RV79	4822 116 83884	47kΩ	5%	1/6W
RV80	4822 116 83884	47kΩ	5%	1/6W
RV81	4822 116 83864	10kΩ	5%	1/6W
RV82	4822 116 83864	10kΩ	5%	1/6W
RV83	4822 116 83864	10kΩ	5%	1/6W
RV84	4822 116 83864	10kΩ	5%	1/6W
RV85	4822 116 83864	10kΩ	5%	1/6W
RV86	4822 116 83864	10kΩ	5%	1/6W
RV87	4822 116 83864	10kΩ	5%	1/6W
RV88	4822 116 83876	270Ω	5%	1/6W
RV89	4822 113 90141	220Ω	2%	1/4W FUSE
RV90	4822 113 90141	220Ω	2%	1/4W FUSE
RV91	4822 113 90141	220Ω	2%	1/4W FUSE
RV92	4822 116 83864	10kΩ	5%	1/6W
RV93	4822 116 83864	10kΩ	5%	1/6W
RV95	4822 116 52195	47Ω	5%	1/6W

DIODES

DV01	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DV02	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DV03	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A

TRANSISTORS & INTEGRATED CIRCUITS

QE01	4822 209 83631	NJM4558DD
QE02	4822 209 83631	NJM4558DD
QE03	4822 209 83631	NJM4558DD
QE04	4822 209 31575	TC9213P
QE05	4822 209 31575	TC9213P
QE06	4822 209 31575	TC9213P
QE07	4822 209 83631	NJM4558DD
QE08	4822 209 83631	NJM4558DD
QE09	4822 209 83631	NJM4558DD
QE10	4822 209 83631	NJM4558DD
QE11	4822 209 83631	NJM4558DD
QE12	4822 209 83631	NJM4558DD
QV51	4822 130 43818	2SC2878 A B
QV52	4822 130 43818	2SC2878 A B
QV53	4822 130 43818	2SC2878 A B
QV54	4822 130 43818	2SC2878 A B
QV55	4822 130 43818	2SC2878 A B
QV56	4822 130 43818	2SC2878 A B
QV57	4822 130 42292	2SC2120
QV60	4822 130 43818	2SC2878 A B

PF04-TONE CIRCUIT BOARD

CAPACITORS

CF01	4822 124 90352	10µF	20%	16V
CF02	4822 124 90352	10µF	20%	16V
CF03	4822 124 90352	10µF	20%	16V
CF04	4822 124 23056	47µF	20%	16V
CF05	5322 122 32818	2200pF	10%	50V
CF06	5322 122 32818	2200pF	10%	50V
CF07	5322 122 32818	2200pF	10%	50V
CF09	5322 122 32265	100pF	5%	50V
CF10	5322 122 32265	100pF	5%	50V
CF11	5322 122 32265	100pF	5%	50V
CF13	5322 121 42975	0.015µF	5%	50V
CF14	5322 121 42975	0.015µF	5%	50V
CF15	5322 121 42975	0.015µF	5%	50V
CF16	5322 121 42975	0.015µF	5%	50V
CF17	5322 121 42975	0.015µF	5%	50V
CF18	5322 121 42975	0.015µF	5%	50V
CF19	5322 121 42975	0.015µF	5%	50V
CF20	4822 121 43526	0.047µF	5%	50V
CF21	4822 124 41539	47µF	20%	16V
CF22	4822 124 41539	47µF	20%	16V
CF23	4822 124 41539	47µF	20%	16V
CF25	4822 124 23055	22µF	20%	16V
CF26	4822 124 23055	22µF	20%	16V
CF27	4822 124 23055	22µF	20%	16V
CF28	4822 124 90358	22µF	20%	16V
CF29	4822 122 31205	47pF	5%	50V
CF30	4822 122 31205	47pF	5%	50V
CF31	4822 122 31205	47pF	5%	50V
CF32	4822 122 31205	47pF	5%	50V
CF40	4822 124 90354	100µF	20%	16V
CF41	4822 124 90354	100µF	20%	16V
CF43	4822 122 40588	0.022µF	20%	
CF44	4822 122 40588	0.022µF	20%	
CF45	4822 122 40588	0.022µF	20%	
CF46	4822 122 40588	0.022µF	20%	
CF47	4822 122 40588	0.022µF	20%	
CF48	4822 122 40588	0.022µF	20%	

RESISTORS

RF01	4822 116 83884	47kΩ	5%	1/6W
RF02	4822 116 83884	47kΩ	5%	1/6W
RF03	4822 116 83884	47kΩ	5%	1/6W
RF04	4822 116 83884	47kΩ	5%	1/6W
RF05	4822 116 52195	47kΩ	5%	1/6W
RF06	4822 116 52195	47Ω	5%	1/6W
RF07	4822 116 52195	47Ω	5%	1/6W
RF08	4822 116 52195	47Ω	5%	1/6W
RF09	4822 116 83864	10kΩ	5%	1/6W
RF10	4822 116 83864	10kΩ	5%	1/6W
RF11	4822 116 83864	10kΩ	5%	1/6W
RF13	4822 116 83864	10kΩ	5%	1/6W
RF14	4822 116 83864	10kΩ	5%	1/6W
RF15	4822 116 83864	10kΩ	5%	1/6W
RF17	4822 116 83864	10kΩ	5%	1/6W
RF18	4822 116 83864	10kΩ	5%	1/6W
RF19	4822 116 83864	10kΩ	5%	1/6W
RF20	4822 116 83864	10kΩ	5%	1/6W
RF21	4822 116 52257	22kΩ	5%	1/6W
RF22	4822 116 52257	22kΩ	5%	1/6W
RF23	4822 116 52257	22kΩ	5%	1/6W
RF24	4822 116 52257	22kΩ	5%	1/6W
RF29	4822 116 52257	22kΩ	5%	1/6W
RF30	4822 116 52257	22kΩ	5%	1/6W
RF31	4822 116 52257	22kΩ	5%	1/6W

ELECTRICAL PARTS LIST

RF32	4822 116 52257	22kΩ	5%	1/6W
RF41	4822 101 11852	VAR. RK0971430 100K B x 4 BASS		
RF42	4822 101 11852	VAR. RK0971430 100K B x 4 TREBLE		
RF43	4822 100 12007	VAR. RK09L1120 SPECIAL W BARANCE		
RF45	4822 050 11002	1kΩ	5%	1/6W
RF46	4822 050 11002	1kΩ	5%	1/6W
RF81	4822 116 83884	47kΩ	5%	1/6W
RF82	4822 116 83884	47kΩ	5%	1/6W
RF83	4822 116 83884	47kΩ	5%	1/6W
RF84	4822 116 83884	47kΩ	5%	1/6W

INTEGRATED CIRCUITS

QF01	4822 209 70044	QUAD OP. AMP NJM2058D
QF02	4822 209 83631	NJM4558D-D
QF03	4822 209 83631	NJM4558D-D

PL04-VIDEO SELECTER CIRCUIT BOARD

MISCELLANEOUS

JL01	4822 265 10676	TERMINAL YKC21-3235
JL02	4822 265 11201	TERMINAL 1L2P YEL
JL03	4822 267 10715	PLUG TKC-A14P-L1
XX51	4822 242 80288	CRYSTAL AT49 14.31818MHz
XX52	4822 242 73903	CRYSTAL AT49 17.7MHz

CAPACITORS

CL01	4822 124 23055	22µF	20%	10V
CL02	4822 124 21894	10µF		16V
CL03	4822 124 23055	22µF	20%	10V
CL04	4822 124 21894	10µF		16V
CL05	4822 124 23055	22µF	20%	10V
CL06	4822 124 21894	10µF		16V
CL07	4822 124 23055	22µF	20%	10V
CL08	4822 124 21894	10µF		16V
CL14	4822 122 40617	0.1µF	+80%-20%	50V
CL15	4822 122 40617	0.1µF	+80%-20%	50V
CL16	4822 122 30043	0.01µF	+80%-20%	50V
CL17	4822 122 30043	0.01µF	+80%-20%	50V
CL18	4822 124 11912	220µF	20%	6.3V
CL19	4822 124 11912	220µF	20%	6.3V
CX45	4822 122 40617	0.1µF		50V
CX49	4822 124 23112	10µF		16V
CX50	4822 124 41286	47µF		10V
CX51	4822 124 11912	220µF		6.3V
CX52	4822 122 30043	0.01µF	+80%-20%	50V
CX53	4822 124 11912	220µF	20%	6.3V
CX54	4822 122 30043	0.01µF	+80%-20%	50V
CX55	5322 122 32143	22pF	5%	50V
CX56	5322 122 32143	22pF	5%	50V
CX57	5322 122 32143	22pF	5%	50V
CX58	5322 122 32143	22pF	5%	50V
CX59	4822 124 23054	0.47µF	20%	50V
CX60	4822 122 32027	56pF	5%	50V
CX61	4822 124 23053	1µF	20%	50V
CX62	4822 122 30054	1200pF	10%	50V
CX63	4822 124 23053	1µF	20%	50V
CX64	4822 121 51093	0.0068µF	5%	50V
CX65	4822 121 41856	0.022µF	5%	50V
CX66	4822 122 31205	47pF	5%	50V
CX67	4822 125 50384	20pF	TRIMMING	
CX68	4822 124 23053	1µF		50V
CX69	4822 124 41286	47µF		10V
CX70	4822 124 21899	4.7µF		25V
CX71	4822 122 30043	0.01µF	+80%-20%	50V
CX73	4822 124 11912	220µF		6.3V

RESISTORS

RL01	4822 111 41355	75Ω	5%	1/6W
RL02	4822 050 24708	4.7Ω	5%	1/6W
RL03	4822 111 41355	75Ω	5%	1/6W
RL04	4822 050 24708	4.7Ω	5%	1/6W
RL05	4822 111 41355	75Ω	5%	1/6W
RL06	4822 050 24708	4.7Ω	5%	1/6W
RL07	4822 111 41355	75Ω	5%	1/6W
RL08	4822 050 24708	4.7Ω	5%	1/6W
RL09	4822 111 41355	75Ω	5%	1/6W
RL10	4822 111 41355	75Ω	5%	1/6W
RL11	4822 116 52234	100kΩ	5%	1/6W
RX51	4822 116 52271	33kΩ	5%	1/6W
RX52	4822 116 83872	220Ω	5%	1/6W
RX53	4822 116 52235	1MΩ	5%	1/6W
RX54	4822 116 52235	1MΩ	5%	1/6W

ELECTRICAL PARTS LIST

RX55	4822 116 83864	10kΩ	5%	1/6W
RX56	4822 116 83864	10kΩ	5%	1/6W
RX57	4822 116 83864	10kΩ	5%	1/6W
RX59	4822 116 83872	220Ω	5%	1/6W
RX60	4822 116 52243	1.5kΩ	5%	1/6W
RX61	4822 116 83961	6.8kΩ	5%	1/6W
RX62	4822 050 11002	1kΩ	5%	1/6W
RX65	4822 050 11002	1kΩ	5%	1/6W
RX66	4822 050 11002	1kΩ	5%	1/6W
RX68	4822 116 52257	22kΩ	5%	1/6W
RX69	4822 116 83883	470Ω	5%	1/6W
RX71	4822 116 52234	100kΩ	5%	1/6W
RX72	4822 116 52283	4.7kΩ	5%	1/6W

COILS & FILTERS

LX51	4822 157 62909	CHOKE LAL02TA220J 22UH
LX52	4822 157 63312	CHOKE LAL02TA5R6J 5.6UH
LX53	4822 242 73843	EMI DSS306-91-F-223Z

DIODES

DL09	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DL10	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DX61	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A

TRANSISTORS & INTEGRATED CIRCUITS

QL01	4822 209 31538	LC7824 ANALOG SW
QL03	4822 209 32513	MC14576
QX60	4822 209 12668	LC74760-9004 OSD LSI
QX61	4822 130 41947	2SC536SP 2SC2458 2SC3311 2SC1740S
QX62	4822 130 42594	DTC144ES UN4213 47K
QX63	4822 290 16151	NJM2265
QX64	4822 130 41947	2SC536SP 2SC2458 2SC3311 2SC1740S

PL94-AUX IN CIRCUIT BOARD

MISCELLANEOU

JL91	4822 265 10679	TERMINAL YKC21-5599

CAPACITORS

CL88	4822 122 40461	150pF	10%	50V
CL89	4822 122 40461	150pF	10%	50V
CL92	4822 124 23055	22µF		16V
CL97	5322 122 32311	470 pF	10%	50V
CL98	5322 122 32311	470 pF	10%	50V
CS91	4822 124 21894	10µF		16V
CS92	4822 124 21894	10µF		16V
CS93	4822 122 40617	0.1µF	+80%-20%	50V
CS94	4822 122 40617	0.1µF	+80%-20%	50V
CS95	4822 122 40617	0.1µF	+80%-20%	50V

RESISTORS

RL92	4822 111 41355	75Ω	5%	1/6W
RS91	4822 116 83884	47kΩ	5%	1/6W
RS92	4822 116 83884	47kΩ	5%	1/6W

INTEGRATED CIRCUIT

QS91	4822 209 83631	NJM4558DD

PP04-SURROUND AMP CIRCUIT BOARD

MISCELLANEOU

JP01	4822 265 30777	CONNECTIVE PLUG UP 3P

CAPACITORS

CP01	5322 122 32818	2200pF	10%	50V
CP02	5322 122 32818	2200pF	10%	50V
CP03	4822 124 80542	10µF	20%	63V
CP04	4822 124 80542	10µF	20%	63V
CP05	4822 124 41139	100µF		16V
CP06	4822 124 41139	100µF		16V
CP07	4822 122 32185	10pF	0.5pF	50V
CP08	4822 122 32185	10pF	0.5pF	50V
CP09	4822 124 21895	0.22µF		50V
CP10	4822 124 21895	0.22µF		50V
CP11	4822 124 21895	0.22µF		50V
CP12	4822 124 21895	0.22µF		50V
CP13	4822 124 23626	100µF		63V
CP14	4822 124 41134	10µF	20%	63V
CP15	4822 124 23626	100µF		63V
CP16	4822 124 41134	10µF	20%	63V
CP17	4822 124 23055	22µF		10V
CP21	4822 122 31205	47pF	5%	50V
CP22	4822 122 31205	47pF	5%	50V

RESISTORS

RP01	4822 050 11002	1kΩ	5%	1/6W
RP02	4822 050 11002	1kΩ	5%	1/6W
RP03	4822 116 83884	47kΩ	5%	1/6W
RP04	4822 116 83884	47kΩ	5%	1/6W
RP05	4822 116 52291	56kΩ	5%	1/6W
RP06	4822 116 52291	56kΩ	5%	1/6W
RP07	4822 116 52249	1.8kΩ	5%	1/6W
RP08	4822 116 52249	1.8kΩ	5%	1/6W
RP09	4822 050 11301	51kΩ	5%	1/6W
RP10	4822 050 11301	51kΩ	5%	1/6W
RP11	4822 113 80363	0.22Ω	10%	3W
RP12	4822 113 80363	0.22Ω	10%	3W
RP13	4822 052 10102	1kΩ	5%	1/6W
RP14	4822 052 10102	1kΩ	5%	1/6W
RP15	4822 050 11002	1kΩ	5%	1/6W
RP16	4822 050 11002	1kΩ	5%	1/6W
RP17	4822 116 52264	27kΩ	5%	1/6W
RP18	4822 116 52264	27kΩ	5%	1/6W
RP19	4822 116 52257	22kΩ	5%	1/6W
RP20	4822 116 52257	22kΩ	5%	1/6W
RP21	4822 053 10109	10Ω	5%	1W
RP22	4822 053 10109	10Ω	5%	1W
RP23	4822 116 83872	220Ω	5%	1/6W
RP24	4822 116 83872	220Ω	5%	1/6W
RP25	4822 052 10101	100Ω	5%	1/6W
RP26	4822 052 10101	100Ω	5%	1/6W
RP27	4822 116 83961	6.8kΩ	5%	1/6W
RP28	4822 116 52271	33kΩ	5%	1/6W
RP29	4822 116 52176	10Ω	5%	1/6W
RP99	4822 052 10109	10Ω	5%	1/4W

COILS

LP01	4822 157 70022	AIR SPK CHOCK VERTICAL
LP02	4822 157 70022	AIR SPK CHOCK VERTICAL

DIODES

DP01	4822 130 80837	HSS81TD 150V 150MA
DP02	4822 130 80837	HSS81TD 150V 150MA

ELECTRICAL PARTS LIST

TRANSISTORS & INTEGRATED CIRCUITS

QP01	4822 209 32696	⚠	STK401-110 POWER PACK
QP02	4822 130 43233		2SC2240 GR OR BL
QP03	4822 130 43233		2SC2240 GR OR BL
QP04	4822 130 42949		2SA970 GR OR BL

PP94-VOLTAGE SELECT SW CIRCUIT BOARD

MISCELLANEOU

SP91	4822 277 21825	SLIDE SW.SDKGA4

PS04-AUDIO FUNCTION CIRCUIT BOARD

MISCELLANEOUS

JS01	4822 265 10748	TERMINAL 14X14 RA 2L6P W/R NI FLM-GND
JS03	4822 267 10721	PLUG TSK-B14P-A1

CAPACITORS

CS01	4822 124 23056	47µF		16V
CS02	4822 124 23056	47µF		16V
CS03	4822 124 23056	47µF		16V
CS04	4822 124 23056	47µF		16V
CS09	4822 124 41139	100µF		16V
CS10	4822 124 41139	100µF		16V
CS11	4822 124 21899	4.7µF		25V
CS12	4822 124 21899	4.7µF		25V
CS13	4822 124 41139	100µF		16V
CS14	4822 124 41139	100µF		16V
CS15	4822 124 21899	4.7µF		25V
CS16	4822 124 21899	4.7µF		25V
CS17	4822 124 21894	10µF		16V
CS18	4822 124 21894	10µF		16V
CS19	4822 122 40617	0.1µF	+80%-20%	50V
CS21	4822 122 40617	0.1µF	+80%-20%	50V
CS23	4822 126 11069	150pF	10%	
CS24	4822 126 11069	150pF	10%	
CS25	4822 126 11069	150pF	10%	
CS26	4822 126 11069	150pF	10%	
CS27	4822 126 10408	220pF	10%	
CS28	4822 126 10408	220pF	10%	
CS33	4822 126 10408	220pF	10%	
CS34	4822 126 10408	220pF	10%	
CS35	4822 126 10408	220pF	10%	
CS36	4822 126 10408	220pF	10%	

RESISTORS

RS01	4822 116 83884	47kΩ	5%	1/6W
RS02	4822 116 83884	47kΩ	5%	1/6W
RS03	4822 116 83884	47kΩ	5%	1/6W
RS04	4822 116 83884	47kΩ	5%	1/6W
RS07	4822 050 11002	1kΩ	5%	1/6W
RS08	4822 050 11002	1kΩ	5%	1/6W
RS09	4822 050 11002	1kΩ	5%	1/6W
RS10	4822 050 11002	1kΩ	5%	1/6W
RS13	4822 116 83884	47kΩ	5%	1/6W
RS14	4822 116 83884	47kΩ	5%	1/6W
RS15	4822 116 83884	47kΩ	5%	1/6W
RS16	4822 116 83884	47kΩ	5%	1/6W
RS19	4822 116 83884	47kΩ	5%	1/6W
RS20	4822 116 83884	47kΩ	5%	1/6W
RS21	4822 050 11002	1kΩ	5%	1/6W
RS22	4822 050 11002	1kΩ	5%	1/6W
RS29	4822 116 52234	100kΩ	5%	1/6W
RS30	4822 116 52234	100kΩ	5%	1/6W
RS31	4822 116 52234	100kΩ	5%	1/6W
RS32	4822 116 52234	100kΩ	5%	1/6W
RS33	4822 116 52234	100kΩ	5%	1/6W
RS43	4822 116 52256	2.2kΩ	5%	1/6W
RS44	4822 116 52256	2.2kΩ	5%	1/6W
RS45	4822 116 52256	2.2kΩ	5%	1/6W
RS46	4822 116 52256	2.2kΩ	5%	1/6W

INTEGRATED CIRCUITS

QS01	4822 209 83631	NJM4558D-D
QS02	4822 209 83631	NJM4558D-D
QS11	4822 209 32552	LC78211
QS13	4822 209 83631	NJM4558DD

ELECTRICAL PARTS LIST

PS54-V-AUDIO FUNCTION CIRCUIT BOARD

MISCELLANEOUS

JS51	4822 265 10748	TERMINAL 14X14 RA 2L6P W/R NI FLM-GND
JS52	4822 267 31823	TERMINAL RCA PIN JACK RA2L4P YKC21-3049
JS53	4822 267 10721	PLUG TSK-B14P-A1

CAPACITORS

CS51	4822 124 41539	47µF		16V
CS52	4822 124 41539	47µF		16V
CS53	4822 124 41539	47µF		16V
CS54	4822 124 41539	47µF		16V
CS55	4822 124 41539	47µF		16V
CS56	4822 124 41539	47µF		16V
CS57	4822 124 41539	47µF		16V
CS58	4822 124 41539	47µF		16V
CS59	4822 124 21899	4.7µF		25V
CS60	4822 124 21899	4.7µF		25V
CS61	4822 122 40617	0.1µF	+80%-20%	50V
CS65	4822 124 41139	100µF		16V
CS66	4822 124 41139	100µF		16V
CS68	4822 122 40617	0.1µF	+80%-20%	50V
CS69	4822 122 40617	0.1µF	+80%-20%	50V
CS71	4822 126 11069	150pF	10%	
CS72	4822 126 11069	150pF	10%	
CS73	4822 126 11069	150pF	10%	
CS74	4822 126 11069	150pF	10%	
CS75	4822 126 11069	150pF	10%	
CS76	4822 126 11069	150pF	10%	
CS77	4822 126 11069	150pF	10%	
CS78	4822 126 11069	150pF	10%	
CS81	4822 126 10408	220pF	10%	
CS82	4822 126 10408	220pF	10%	
CS83	4822 126 10408	220pF	10%	
CS84	4822 126 10408	220pF	10%	
CS85	4822 126 10408	220pF	10%	
CS86	4822 126 10408	220pF	10%	
CS87	4822 126 10408	220pF	10%	
CS88	4822 126 10408	220pF	10%	
CS89	4822 126 10408	220pF	10%	
CS90	4822 126 10408	220pF	10%	
CS93	4822 124 23056	47µF		16V
CS94	4822 124 23056	47µF		16V

RESISTORS

RS51	4822 116 83884	47kΩ	5%	1/6W
RS52	4822 116 83884	47kΩ	5%	1/6W
RS53	4822 116 83884	47kΩ	5%	1/6W
RS54	4822 116 83884	47kΩ	5%	1/6W
RS55	4822 116 83884	47kΩ	5%	1/6W
RS56	4822 116 83884	47kΩ	5%	1/6W
RS57	4822 116 83884	47kΩ	5%	1/6W
RS58	4822 116 83884	47kΩ	5%	1/6W
RS59	4822 050 11002	1kΩ	5%	1/6W
RS60	4822 050 11002	1kΩ	5%	1/6W
RS61	4822 050 11002	1kΩ	5%	1/6W
RS62	4822 050 11002	1kΩ	5%	1/6W
RS63	4822 050 11002	1kΩ	5%	1/6W
RS64	4822 050 11002	1kΩ	5%	1/6W
RS65	4822 050 11002	1kΩ	5%	1/6W
RS66	4822 050 11002	1kΩ	5%	1/6W
RS67	4822 116 83884	47kΩ	5%	1/6W
RS68	4822 116 83884	47kΩ	5%	1/6W
RS69	4822 116 83884	47kΩ	5%	1/6W
RS70	4822 116 83884	47kΩ	5%	1/6W
RS71	4822 116 83884	47kΩ	5%	1/6W
RS72	4822 116 83884	47kΩ	5%	1/6W
RS73	4822 116 83884	47kΩ	5%	1/6W
RS74	4822 116 83884	47kΩ	5%	1/6W
RS75	4822 116 52234	100kΩ	5%	1/6W
RS76	4822 116 52234	100kΩ	5%	1/6W
RS77	4822 050 11002	1kΩ	5%	1/6W
RS78	4822 050 11002	1kΩ	5%	1/6W
RS85	4822 116 52234	100kΩ	5%	1/6W
RS93	4822 116 83884	47kΩ	5%	1/6W
RS94	4822 116 83884	47kΩ	5%	1/6W

INTEGRATED CIRCUITS

QS51	4822 209 83631	NJM4558DD
QS52	4822 209 83631	NJM4558D-D
QS53	4822 209 83631	NJM4558D-D
QS54	4822 209 83631	NJM4558DD
QS56	4822 209 32552	LC78211

ELECTRICAL PARTS LIST

PU04-FRONT CIRCUIT BOARD

MISCELLANEOUS

JU01	4822 265 11202	JACK FFC CONECTOR 23P 9604S-23F
SU01	4822 276 20508	PUSH SW. TACT
SU02	4822 276 20508	PUSH SW. TACT
SU03	4822 276 20508	PUSH SW. TACT
SU04	4822 276 20508	PUSH SW. TACT
SU06	4822 276 20508	PUSH SW. TACT
SU07	4822 276 20508	PUSH SW. TACT
SU08	4822 276 20508	PUSH SW. TACT
SU09	4822 276 20508	PUSH SW. TACT
SU12	4822 276 20508	PUSH SW. TACT
SU13	4822 276 20508	PUSH SW. TACT
SU14	4822 276 20508	PUSH SW. TACT
SU16	4822 276 20508	PUSH SW. TACT
SU17	4822 276 20508	PUSH SW. TACT
SU20	4822 276 20508	PUSH SW. TACT
SU21	4822 276 20508	PUSH SW. TACT
SU23	4822 276 20508	PUSH SW. TACT
VU01	4822 135 00164	DISPLAY UNIT,FL FIP12EM8R
XU01	4822 242 72066	SERAMIC VIB. CERALOCK CST 8.00MHz MT

CAPACITORS

CL14	4822 122 30043	0.01µF	+80%-20%	50V
CU01	4822 122 40588	22000pF		25V
CU02	4822 124 23056	47µF		10V
CU03	4822 124 80087	220µF		6.3V
CU04	4822 122 40588	22000Pf	20%	25V
CU05	4822 126 11558	0.1µF	20%	50V
CU07	4822 124 90406	BIG 0.22F		5.5V
CU10	4822 122 40588	22000pF	10%	25V
CU11	4822 126 10364	100pF	10%	
CU12	4822 126 10364	100pF	10%	
CU13	4822 122 40617	0.1µF	+80%-20%	50V
CU14	4822 122 30043	0.01µF	+80%-20%	50V
CU20	4822 122 30043	0.01µF	+80%-20%	50V

RESISTORS

RU01	4822 116 52243	1.5kΩ	5%	1/6W
RU02	4822 116 52243	1.5kΩ	5%	1/6W
RU03	4822 116 52243	1.5kΩ	5%	1/6W
RU04	4822 116 52243	1.5kΩ	5%	1/6W
RU05	4822 116 52243	1.5kΩ	5%	1/6W
RU06	4822 116 52256	2.2kΩ	5%	1/6W
RU07	4822 116 52256	2.2kΩ	5%	1/6W
RU08	4822 116 52256	2.2kΩ	5%	1/6W
RU09	4822 116 52256	2.2kΩ	5%	1/6W
RU10	4822 116 52256	2.2kΩ	5%	1/6W
RU11	4822 116 52269	3.3kΩ	5%	1/6W
RU12	4822 116 52269	3.3kΩ	5%	1/6W
RU13	4822 116 52269	3.3kΩ	5%	1/6W
RU15	4822 116 52269	3.3kΩ	5%	1/6W
RU16	4822 116 83961	6.8kΩ	5%	1/6W
RU18	4822 116 83961	6.8kΩ	5%	1/6W
RU26	4822 116 83864	10kΩ	5%	1/6W
RU27	4822 116 83864	10kΩ	5%	1/6W
RU28	4822 116 83864	10kΩ	5%	1/6W
RU29	4822 116 83864	10kΩ	5%	1/6W
RU30	4822 116 83864	10kΩ	5%	1/6W
RU31	4822 116 83884	47kΩ	5%	1/6W
RU34	4822 116 83864	10kΩ	5%	1/6W
RU35	4822 116 83864	10kΩ	5%	1/6W
RU36	4822 116 83864	10kΩ	5%	1/6W
RU37	4822 116 83884	47kΩ	5%	1/6W
RU38	4822 116 83864	10kΩ	5%	1/6W
RU40	4822 116 52249	1.8kΩ	5%	1/6W
RU41	4822 116 52249	1.8kΩ	5%	1/6W
RU42	4822 116 83884	47kΩ	5%	1/6W
RU44	4822 116 83864	10kΩ	5%	1/6W
RU45	4822 116 52176	10kΩ	5%	1/6W
RU46	4822 116 83864	10kΩ	5%	1/6W
RU47	4822 116 83864	10kΩ	5%	1/6W
RU48	4822 116 83884	47kΩ	5%	1/6W
RU49	4822 116 83864	10kΩ	5%	1/6W
RU50	4822 116 83864	10kΩ	5%	1/6W
RU51	4822 116 83864	10kΩ	5%	1/6W
RU52	4822 116 52219	330Ω	5%	1/6W
RU53	4822 116 52175	100Ω	5%	1/6W
RU54	4822 116 52249	1.8kΩ	5%	1/6W
RU55	4822 117 10158	10Ω	5%	1/4W
RU56	4822 116 52234	100kΩ	5%	1/6W

DIODES

DU01	4822 130 80589	1SS132
DU07	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU09	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU10	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU11	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU12	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU13	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU14	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU15	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU16	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU17	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU18	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DU19	4822 130 80326	LED LT3D8B RED

TRANSISTORS & INTEGRATED CIRCUITS

QU01	4822 900 11229	µ-PRO TMP87PS71F
QU02	4822 130 61227	DIG. DTA114ES
QU04	4822 130 42594	DIG. DTC144ES
QU07	4822 130 60588	DIG. DTC114ES UN4211 10K
QU08	4822 130 42594	DIG. DTC144ES
QU09	4822 130 42594	DIG. DTC144ES
QU10	4822 130 42682	DIG. DTA144ES UN4113 47K
QU11	4822 130 63211	DIG. DIGI-TRA DTA114TS
QU12	4822 130 61227	DIG. DTA114ES
QU14	4822 130 42682	DIG. DTA114ES UN4113 47K
QU15	4822 130 42594	DIG. DTC144ES
QU16	4822 130 83519	PHOTO UNIT IR RECIVER RPM-670CBR
QU17	4822 130 61227	DIG. DTA114ES
QU18	4822 209 14612	74HC541 DIP

ELECTRICAL PARTS LIST

PU54-MASTER VOL CIRCUIT BOARD

MISCELLANEOUS

JU71	4822 267 10723	PLUG TSK-B04P-A1
SU75	4822 273 10296	ROTARY ENCODER EC16B40B0

CAPACITORS

CU71	4822 126 10364	100pF	10%	50V
CU72	4822 126 10364	100pF	10%	50V

RESISTORS

RU71	4822 116 52234	100kΩ	5%	1/6W
RU72	4822 116 52234	100kΩ	5%	1/6W
RU73	4822 116 83874	220kΩ	5%	1/6W
RU74	4822 116 83874	220kΩ	5%	1/6W

INTEGRATED CIRCUITS

QU71	4822 130 41947	2SC536SP ETC
QU72	4822 130 41947	2SC536SP ETC

PU94-POWER SW CIRCUIT BOARD

MISCELLANEOU

SU91	4822 276 12217	PUSH SW. ALPS SPUL12 2-2 NON-SH.MID-PWR

PW04-H.P CIRCUIT BOARD

MISCELLANEOU

JW01	4822 265 10685	H.P JACK HLJ2307-01-3160

CAPACITORS

CW01	4822 122 30043	0.01µF	+80%-20%	50V
CW02	4822 122 30043	0.01µF	+80%-20%	50V
CW05	4822 122 30043	0.01µF	+80%-20%	50V

PY04-CONNECT CIRCUIT BOARD

MISCELLANEOUS

JY01	4822 267 10724	JACK TKC-A14X-B1
JY02	4822 267 10725	JACK TSK-B14X-A1
JY03	4822 267 10725	JACK TSK-B14X-A1
JY04	4822 267 10724	JACK TKC-A14X-B1
JY06	4822 267 10726	PLUG TKC-V30P-A1
JY09	4822 265 11202	JACK 9604S-23F 23P FFC CONNECTOR
JY10	4822 265 40802	PLUG 2MM PITCH UP CONNECTOR 8PIN
JY12	4822 267 10724	JACK TKC-A14X-B1
JY13	4822 267 10727	JACK TSK-B17X-A1
JY15	4822 265 40796	PLUG 2MM PITCH UP CONNECTOR 7PIN
JY16		PLUG CONNECTOR 13P (UP)

CAPACITORS

CY02	4822 122 40617	0.1µF	+80%-20%	50V
CY04	4822 122 40617	0.1µF	+80%-20%	50V
CY06	4822 122 31205	47pF	5%	50V
CY15	4822 122 31348	120Pf	10%	50V
CY16	4822 122 32027	56pF	5%	50V
CY17	4822 122 32027	56pF	5%	50V
CY98	4822 122 31205	47pF	5%	50V

RESISTORS

RY01	4822 116 83864	10kΩ	5%	1/6W
RY02	4822 116 83864	10kΩ	5%	1/6W
RY03	4822 116 83864	10kΩ	5%	1/6W
RY04	4822 116 83864	10kΩ	5%	1/6W
RY05	4822 116 83864	10kΩ	5%	1/6W
RY06	4822 116 83864	10kΩ	5%	1/6W
RY07	4822 116 83864	10kΩ	5%	1/6W
RY08	4822 116 83864	10kΩ	5%	1/6W
RY09	4822 116 83864	10kΩ	5%	1/6W
RY10	4822 116 83864	10kΩ	5%	1/6W
RY12	4822 116 83864	10kΩ	5%	1/6W
RY13	4822 116 83864	10kΩ	5%	1/6W
RY14	4822 116 83864	10kΩ	5%	1/6W
RY15	4822 116 83864	10kΩ	5%	1/6W
RY22	4822 116 83864	10kΩ	5%	1/6W
RY23	4822 116 52269	3.3kΩ	5%	1/6W
RY25	4822 116 83864	10kΩ	5%	1/6W
RY26	4822 116 83864	10kΩ	5%	1/6W
RY27	4822 116 83864	10kΩ	5%	1/6W
RY28	4822 116 52283	4.7kΩ	5%	1/6W
RY29	4822 116 52283	4.7kΩ	5%	1/6W
RY30	4822 116 52175	100Ω	5%	1/6W
RY31	4822 116 52175	100Ω	5%	1/6W
RY32	4822 116 52175	100Ω	5%	1/6W

DIODES

DY01	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY02	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY03	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY04	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY05	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY06	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY07	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY08	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY09	4822 130 82421	1D3 1A 200V
DY10	4822 130 32362	1SS176 MA165 1SS254 30VO.1A
DY11	4822 130 32362	1SS176 MA165 1SS254 30VO.1A

TRANSISTORS & INTEGRATED CIRCUITS

QY01	4822 130 61227	DIG.DTA114ES UN411
QY02	4822 130 42594	DIG.DTC144ES UN4213 47K
QY03	4822 130 61227	DIG.DTA114ES UN411

ELECTRICAL PARTS LIST

QY04	4822 130 42594	DIG.DTC144ES UN4213 47K
QY05	4822 130 61227	DIG.DTA114ES UN411
QY06	4822 130 42594	DIG.DTC144ES UN4213 47K
QY07	4822 130 61227	DIG.DTA114ES UN411
QY08	4822 130 42594	DIG.DTC144ES UN4213 47K
QY10	4822 209 33024	TC9173P
QY11	4822 209 61704	TC9174P

P104-TUNER CIRCUIT BOARD

MISCELLANEOUS

A101	4822 210 10372	FM FRONT END FE415-G09
J101	4822 290 81632	TERMINAL FM AM ANT
J301	4822 267 10715	PLUG TKC-A14P-L1
S301	4822 277 21712	SLIDE SW.
X201	4822 242 81608	CSB456F33
X501	4822 242 72333	CRYSTAL 7.2MHz
X901	4822 242 81608	CSB456F33
X902	4822 242 72527	CST4.00MGW

CAPACITORS

CA01	4822 125 50384	20pF	TRIMMING VCT51E	
CA02	4822 122 40306	0.047µF	+80%-20%	50V
CA03	4822 122 31823	15pF	5%	50V
CA04	4822 121 42466	390pF		100V
CA05	4822 122 31205	47pF	5%	50V
CA06	4822 122 30043	0.01µF	+80%-20%	50V
CA18	4822 124 21899	4.7µF		25V
C201	4822 122 30043	0.01µF	+80%-20%	50V
C202	4822 122 30043	0.01µF	+80%-20%	50V
C203	4822 122 40306	0.047µF	+80%-20%	50V
C204	4822 122 40306	0.047µF	+80%-20%	50V
C205	4822 124 23053	1µF		50V
C206	4822 124 21894	10µF		16V
C207	4822 124 41139	100µF		16V
C208	4822 122 40306	0.047µF	+80%-20%	50V
C209	4822 124 23053	1µF		50V
C210	4822 122 30043	0.01µF	+80%-20%	50V
C211	4822 124 40786	2.2µF	20%	50V
C212	4822 124 23053	1µF		50V
C213	4822 124 23054	0.47µF		50V
C214	4822 124 23905	47µF	20%	35V
C215	4822 122 40306	0.047µF	+80%-20%	50V
C216	4822 124 41139	100µF		16V
C217	4822 121 42469	5600 pF	5%	
C218	4822 122 30043	0.01µF	+80%-20%	50V
C219	4822 124 21894	10µF	16V	
C220	5322 122 32818	2200pF	10%	50V
C222	5322 122 32332	1500pF	10%	50V
C223	4822 122 30043	0.01µF	+80%-20%	50V
C224	4822 122 30043	0.01µF	+80%-20%	50V
C225	4822 122 30043	0.01µF	+80%-20%	50V
C226	4822 122 30043	0.01µF	+80%-20%	50V
C227	4822 121 42713	680pF	5%	50V
C233	4822 122 30043	0.01µF	+80%-20%	50V
C234	4822 122 30043	0.01µF	+80%-20%	50V
C301	5322 121 42489	0.033µF	5%	50V
C302	5322 121 42489	0.033µF	5%	50V
C303	4822 124 21894	10µF		16V
C304	4822 124 21894	10µF		16V
C305	4822 124 21899	4.7µF		25V
C306	4822 124 21899	4.7µF		25V
C307	4822 124 21894	10µF		16V
C308	4822 124 21894	10µF		16V
C309	5322 121 42975	0.015µF	5%	50V
C310	5322 121 42975	0.015µF	5%	50V
C311	4822 124 23055	22µF		16V
C312	4822 124 23055	22µF		16V
C313	4822 124 21894	10µF		16V
C314	4822 124 23905	47µF	20%	35V
C315	4822 122 10367	150pF	5%	50V
C316	4822 122 10367	150pF	5%	50V
C317	4822 122 40459	100pF	10%	50V
C318	4822 122 40459	100pF	10%	50V
C501	4822 122 31205	47pF	5%	50V

ELECTRICAL PARTS LIST

C502	4822 122 31205	47pF	5%	50V
C503	4822 124 42234	100µF	20%	6.3V
C504	4822 122 30043	0.01µF	+80%-20%	50V
C505	4822 124 23053	1µF		50V
C506	4822 124 41604	0.1µF		50V
C507	4822 122 30043	0.01µF	+80%-20%	50V
C508	4822 124 41139	100µF		16V
C509	4822 122 40459	100pF	10%	50V
C510	4822 122 40459	100pF	10%	50V
C511	4822 122 30043	0.01µF	+80%-20%	50V
C901	4822 124 42234	100µF	20%	6.3V
C902	4822 124 21894	10µF		16V
C903	4822 122 30099	3300pF	10%	50V
C904	4822 122 30099	3300pF	10%	50V
C905	4822 122 30043	0.01µF	+80%-20%	50V
C906	4822 122 30043	0.01µF	+80%-20%	50V
C907	4822 124 21894	10µF		16V
C908	4822 124 21894	10µF		16V
C909	4822 124 21899	4.7µF		25V
C910	4822 124 21894	10µF		16V
C911	4822 122 40588	0.022µF	20%	50V
C912	5322 121 42489	0.033µF	5%	50V
C913	5322 121 42489	0.033µF	5%	50V
C914	4822 121 51093	0.0068µF	5%	50V
C915	4822 122 30043	0.01µF	+80%-20%	50V

RESISTORS

RA01	4822 116 83864	10kΩ	5%	1/6W
RA02	4822 116 52234	100kΩ	5%	1/6W
RA11	4822 100 11352	22kΩ	TRIMMING	
R102	4822 116 83864	10kΩ	5%	1/6W
R103	4822 116 83864	10kΩ	5%	1/6W
R202	4822 116 83883	470Ω	5%	1/6W
R203	4822 116 52256	2.2kΩ	5%	1/6W
R204	4822 116 83883	470Ω	5%	1/6W
R205	4822 116 52219	330Ω	5%	1/6W
R206	4822 116 52244	15kΩ	5%	1/6W
R207	4822 050 21801 ⚠	180Ω	5%	1/4W
R208	4822 116 52276	3.9kΩ	5%	1/6W
R209	4822 116 52234	100kΩ	5%	1/6W
R210	4822 116 52269	3.3kΩ	5%	1/6W
R211	4822 100 11352	22kΩ	TRIMMING	
R212	4822 100 11352	22kΩ	TRIMMING	
R213	4822 116 52186	22Ω	5%	1/6W
R214	4822 116 83884	47KΩ	5%	1/6W
R215	4822 116 52234	100kΩ	5%	1/6W
R216	4822 116 83864	10kΩ	5%	1/6W
R217	4822 050 21801 ⚠	180Ω	5%	1/4W
R218	4822 100 11373	4.7kΩ	TRIMMING	
R219	4822 116 52272	330kΩ	5%	1/6W
R301	4822 116 52234	100kΩ	5%	1/6W
R302	4822 116 52234	100kΩ	5%	1/6W
R303	4822 116 83864	10kΩ	5%	1/6W
R304	4822 116 83864	10kΩ	5%	1/6W
R305	4822 116 52244	15kΩ	5%	1/6W
R306	4822 116 52244	15kΩ	5%	1/6W
R307	4822 116 83872	220Ω	5%	1/6W
R308	4822 116 83872	220Ω	5%	1/6W
R309	4822 116 83884	47KΩ	5%	1/6W
R310	4822 116 83884	47KΩ	5%	1/6W
R311	4822 116 83884	47KΩ	5%	1/6W
R312	4822 116 83884	47KΩ	5%	1/6W
R313	4822 116 83929	220Ω	5%	1/4W
R501	4822 050 11002	1kΩ	5%	1/6W
R502	4822 116 52269	3.3kΩ	5%	1/6W
R503	4822 050 11002	1kΩ	5%	1/6W
R504	4822 116 83864	10kΩ	5%	1/6W
R506	4822 050 11002	1kΩ	5%	1/6W
R507	4822 116 52269	3.3kΩ	5%	1/6W
R508	4822 116 83884	47KΩ	5%	1/6W
R510	4822 050 11002	1kΩ	5%	1/6W
R511	4822 050 11002	1kΩ	5%	1/6W
R512	4822 053 10271 ⚠	270Ω	5%	1W
R513	4822 116 83864	10kΩ	5%	1/6W
R514	4822 052 10479 ⚠	47KΩ	5%	1/6W
R515	4822 116 52297	68kΩ	5%	1/6W
R516	4822 116 83884	47kΩ	5%	1/6W
R517	4822 116 83884	47kΩ	5%	1/6W
R901	4822 116 52271	33kΩ	5%	1/6W
R902	4822 116 83864	10kΩ	5%	1/6W
R903	4822 116 52257	22kΩ	5%	1/6W
R904	4822 050 11002	1kΩ	5%	1/6W
R905	4822 116 83961	6.8kΩ	5%	1/6W
R906	4822 100 11373	4.7kΩ	TRIMMING	
R907	4822 050 11002	1kΩ	5%	1/6W
R908	4822 116 52269	3.3kΩ	5%	1/6W
R909	4822 116 83864	10kΩ	5%	1/6W
R910	4822 053 10221 ⚠	220Ω	5%	1W
R911	4822 116 83864	10kΩ	5%	1/6W

COILS & FILTERS

F201	4822 242 70665	CER. SFE10.7MS3-A
F202	4822 242 70665	CER. SFE10.7MS3-A
LA01	4822 157 63084	ANT MW 280UH
LA02	4822 157 70779	OSC. MW
LA05	4822 157 53589	CHOKE 39MH J
LA06	4822 242 71509	CER. SFL450J3
L201	4822 157 63904	I.F.T. FM DET M292BEAS-5968Z
L301	4822 157 71731	M.P.X. 19,38KHz LpF
L302	4822 157 71731	M.P.X. 19,38KHz LpF
L501	4822 157 70813	CHOKE LAL02TA470J 47UH
L502	4822 157 70813	CHOKE LAL02TA470J 47UH
L503	4822 157 70813	CHOKE LAL02TA470J 47UH
L504	4822 157 70813	CHOKE LAL02TA470J 47UH

DIODES

DA01	4822 125 50416	VARI SVC342-L
DA05	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
DA06	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D201	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D202	4822 130 80318	ZENER RD6.8JB2 MTZJ6.8C
D501	4822 130 80317	ZENER RD5.1JB2 MTZJ5.1B
D901	4822 130 80317	ZENER RD5.1JB2 MTZJ5.1B

TRANSISTORS & INTEGRATED CIRCUITS

Q201	4822 209 90535	LA1836 FM AM IF MPX IC
Q202	4822 130 62294	2SC1809S P
Q203	4822 130 61227	DTA114ES UN4111 10K
Q204	4822 130 42594	DTC144ES UN4213 47K
Q301	4822 209 83631	NJM4558D-D
Q501	4822 209 30178	LC7218 PLL
Q502	4822 130 42121	F.E.T. 2SK30ATM Y1
Q503	4822 130 41947	2SC536SP 2SC2458 2SC3311 2SC1740S
Q901	4822 209 32706	LA2232 RDS DEMODULATOR
Q902	4822 209 33818	LC7073 RDS ERROR CORRECTION
Q903	4822 130 41947	2SC536P 2SC2458 2SC3311 2SC1740S

ELECTRICAL PARTS LIST

P604-MPEG/AC-3 DECODE MODULE CIRCUIT BOARD

MISCELLANEOUS

JR01	4822 265 10683	TERMINAL YKC21-3211 2P BL FRONT SHIELD
JR02	4822 218 11487	CONNECTOR GP1F32R OPTICAL RECIVER
J601	4822 267 10715	PLUG TKC-A14P-L1
J651	4822 265 11197	JACK 53261-0710 1.25MM SMD
L605	4822 526 10584	FERRITE CORE ZBF503D-00TA
L631	4822 526 10584	FERRITE CORE ZBF503D-00TA
L691	4822 526 10584	FERRITE CORE ZBF503D-00TA
X651	4822 242 10851	CRYSTAL 12.288MHz
X691	4822 242 10852	CRYSTAL 16.000MHz

CAPACITORS

CD01	4822 126 11687	0.1µF	+80%-20%	CHIP
CD02	4822 126 11687	0.1µF	+80%-20%	CHIP
CD03	4822 124 42234	100µF	20%	6.3V
CD04	4822 126 11687	0.1µF	+80%-20%	CHIP
CD05	4822 126 11687	0.1µF	+80%-20%	CHIP
CD06	4822 124 21894	10µF		16V
CD07	4822 121 43897	1000pF	5%	50V
CD08	4822 121 43897	1000pF	5%	50V
CD09	4822 124 21894	10µF		16V
CD10	4822 124 21894	10µF		16V
CD11	4822 121 70685	120pF	5%	100V
CD12	4822 121 70685	120pF	5%	100V
CD13	5322 122 32336	560pF	5%	50V
CD14	5322 122 32336	560pF	5%	50V
CD15	4822 124 21894	10µF		16V
CD16	4822 124 21894	10µF		16V
CD17	4822 126 11687	0.1µF	+80%-20%	CHIP
CD18	4822 126 11687	0.1µF	+80%-20%	CHIP
CD31	4822 126 11687	0.1µF	+80%-20%	CHIP
CD32	4822 126 11687	0.1µF	+80%-20%	CHIP
CD33	4822 124 42234	100µF	20%	6.3V
CD34	4822 126 11687	0.1µF	+80%-20%	CHIP
CD35	4822 126 11687	0.1µF	+80%-20%	CHIP
CD36	4822 124 21894	10µF		16V
CD37	4822 121 43897	1000pF	5%	50V
CD38	4822 121 43897	1000pF	5%	50V
CD39	4822 124 21894	10µF		16V
CD40	4822 124 21894	10µF		16V
CD41	4822 121 70685	120Pf	5%	100V
CD42	4822 121 70685	120pF	5%	100V
CD43	5322 122 32336	560pF	5%	50V
CD44	5322 122 32336	560pF	5%	50V
CD45	4822 124 21894	10µF		16V
CD46	4822 124 21894	10µF		16V
CD47	4822 126 11687	0.1µF	+80%-20%	CHIP
CD48	4822 126 11687	0.1µF	+80%-20%	CHIP
CD51	4822 126 11687	0.1µF	+80%-20%	CHIP
CD52	4822 126 11687	0.1µF	+80%-20%	CHIP
CD53	4822 124 42234	100µF	20%	6.3V
CD54	4822 126 11687	0.1µF	+80%-20%	CHIP
CD55	4822 126 11687	0.1µF	+80%-20%	CHIP
CD56	4822 124 21894	10µF		16V
CD57	4822 121 43897	1000pF	5%	50V
CD58	4822 121 43897	1000pF	5%	50V
CD59	4822 124 21894	10µF		16V
CD60	4822 124 21894	10µF		16V
CD61	4822 121 70685	120pF	5%	100V
CD62	4822 121 70685	120pF	5%	100V
CD63	5322 122 32336	560pF	5%	50V
CD64	5322 122 32336	560pF	5%	50V
CD65	4822 124 21894	10µF		16V
CD66	4822 124 21894	10µF		16V
CD67	4822 126 11687	0.1µF	+80%-20%	CHIP
CD68	4822 126 11687	0.1µF	+80%-20%	CHIP
CK01	4822 122 33744	100pF	5%	50V
CK02	4822 122 33744	100pF	5%	50V
CK03	4822 124 23112	10µF		16V
CK04	4822 124 23112	10µF		16V
CK05	4822 122 33744	100pF	5%	50V
CK06	4822 122 33744	100pF	5%	50V
CK07	4822 124 42234	100µF	20%	6.3V
CK08	4822 124 42234	100µF	20%	6.3V
CK09	4822 126 11687	0.1µF	+80%-20%	CHIP
CK10	4822 126 11687	0.1µF	+80%-20%	CHIP
CK11	4822 124 21894	10µF		16V
CK12	4822 124 21894	10µF		16V
CK13	4822 122 33785	68pF	5%	
CK14	4822 122 33785	68pF	5%	
CK15	4822 126 11567	0.022µF	10%	16V CHIP
CK16	4822 124 41286	47µF		10V
CK17	4822 126 11567	0.022µF	10%	16V CHIP
CK18	4822 126 11567	0.022µF	10%	16V CHIP
CK19	4822 124 41286	47µF		10V
CK20	4822 124 41286	47µF		10V
CK21	4822 126 11567	0.022µF	10%	16V CHIP
CK22	4822 124 41286	47µF		10V
CK23	4822 126 11704	0.022µF	+80%-20%	
CK24	4822 126 11687	0.1µF	+80%-20%	CHIP
CK25	4822 124 41286	47µF		10V
CR01	4822 126 13837	0.1µF	10%	10V
CR02	4822 126 13837	0.1µF	10%	10V
CR03	4822 126 11687	0.1µF	+80%-20%	CHIP
CR04	4822 124 42234	100µF	20%	6.3V
CR05	4822 126 11687	0.1µF	+80%-20%	CHIP
CR06	4822 126 13309	0.033µF	10%	
CR07	4822 121 42661	0.33µF	5%	50V
CR08	4822 126 11687	0.1µF	+80%-20%	CHIP
CR09	4822 126 11687	0.1µF	+80%-20%	CHIP
CR11	4822 126 11687	0.1µF	+80%-20%	CHIP
C601	4822 126 11687	0.1µF	+80%-20%	CHIP
C602	4822 126 11687	0.1µF	+80%-20%	CHIP
C603	5322 126 11583	0.01µF	10%	50V CHIP
C604	4822 126 14256	1200pF	10%	50V CHIP
C605	4822 126 11687	0.1µF	+80%-20%	CHIP
C606	4822 126 11687	0.1µF	+80%-20%	CHIP
C607	4822 126 11687	0.1µF	+80%-20%	CHIP
C608	4822 126 11687	0.1µF	+80%-20%	CHIP
C609	4822 126 11687	0.1µF	+80%-20%	CHIP
C610	4822 126 11687	0.1µF	+80%-20%	CHIP
C611	4822 126 11687	0.1µF	+80%-20%	CHIP
C612	4822 126 11687	0.1µF	+80%-20%	CHIP
C613	4822 126 11687	0.1µF	+80%-20%	CHIP
C614	4822 126 11687	0.1µF	+80%-20%	CHIP
C615	4822 126 11687	0.1µF	+80%-20%	CHIP
C616	4822 126 11687	0.1µF	+80%-20%	CHIP
C617	4822 124 42234	100µF	20%	6.3V
C618	4822 124 42234	100µF	20%	6.3V
C619	4822 124 42234	100µF	20%	6.3V
C620	4822 126 11687	0.1µF	+80%-20%	CHIP
C621	4822 124 42234	100µF	20%	6.3V
C631	4822 126 11687	0.1µF	+80%-20%	CHIP
C632	5322 126 11583	0.01µF	10%	50V CHIP
C633	4822 126 11687	0.1µF	+80%-20%	CHIP
C634	4822 126 11687	0.1µF	+80%-20%	CHIP
C635	4822 126 11687	0.1µF	+80%-20%	CHIP
C636	4822 126 11687	0.1µF	+80%-20%	CHIP
C637	4822 126 11687	0.1µF	+80%-20%	CHIP
C638	4822 126 11687	0.1µF	+80%-20%	CHIP
C639	4822 126 11687	0.1µF	+80%-20%	CHIP

ELECTRICAL PARTS LIST

C640	4822 124 42234	100µF	20%	6.3V
C641	4822 126 11687	0.1µF	+80%-20%	CHIP
C642	4822 124 42234	100µF	20%	6.3V
C643	5322 126 11583	0.01µF	10%	50V CHIP
C651	4822 122 33761	22 pF	5%	50V
C652	4822 122 33761	22 pF	5%	50V
C653	4822 126 11687	0.1µF	+80%-20%	CHIP
C654	4822 126 11687	0.1µF	+80%-20%	CHIP
C655	4822 126 11687	0.1µF	+80%-20%	CHIP
C656	4822 126 11687	0.1µF	+80%-20%	CHIP
C657	4822 126 11687	0.1µF	+80%-20%	CHIP
C658	4822 126 11687	0.1µF	+80%-20%	CHIP
C659	4822 126 11687	0.1µF	+80%-20%	CHIP
C660	4822 126 11687	0.1µF	+80%-20%	CHIP
C661	4822 126 11687	0.1µF	+80%-20%	CHIP
C662	4822 126 11687	0.1µF	+80%-20%	CHIP
C663	4822 126 11687	0.1µF	+80%-20%	CHIP
C664	4822 126 11687	0.1µF	+80%-20%	CHIP
C665	4822 126 11687	0.1µF	+80%-20%	CHIP
C671	4822 126 11687	0.1µF	+80%-20%	CHIP
C673	4822 126 11687	0.1µF	+80%-20%	CHIP
C675	4822 124 42234	100µF	20%	6.3V
C677	4822 126 11687	0.1µF	+80%-20%	CHIP
C678	4822 126 11687	0.1µF	+80%-20%	CHIP
C679	4822 126 11687	0.1µF	+80%-20%	CHIP
C680	4822 126 11687	0.1µF	+80%-20%	CHIP
C681	4822 124 42234	100µF	20%	6.3V
C682	4822 124 42234	100µF	20%	6.3V
C689	4822 126 11687	0.1µF	+80%-20%	CHIP
C690	4822 126 13837	0.1µF	10%	10V
C691	4822 122 33761	22 pF	5%	50V
C692	4822 122 33761	22 pF	5%	50V
C693	4822 126 11687	0.1µF	+80%-20%	CHIP
C694	4822 126 11687	0.1µF	+80%-20%	CHIP
C695	4822 126 11682	220pF	10%	50V CHIP
C696	4822 126 11682	220pF	10%	50V CHIP
C697	4822 126 11682	220pF	10%	50V CHIP
C698	4822 126 11682	220pF	10%	50V CHIP
C699	4822 126 11682	220pF	10%	50V CHIP

RESISTORS

L651	4822 051 30008	0Ω	5%	1/16W CHIP
L652	4822 051 30008	0Ω	5%	1/16W CHIP
L653	4822 051 30008	0Ω	5%	1/16W CHIP
L654	4822 051 30008	0Ω	5%	1/16W CHIP
L655	4822 051 30008	0Ω	5%	1/16W CHIP
L656	4822 051 30008	0Ω	5%	1/16W CHIP
RD01	4822 051 30473	47kΩ	5%	1/16W CHIP
RD02	4822 051 30473	47kΩ	5%	1/16W CHIP
RD03	4822 051 30103	10kΩ	5%	1/16W CHIP
RD04	4822 051 30103	10kΩ	5%	1/16W CHIP
RD05	4822 051 30103	10kΩ	5%	1/16W CHIP
RD06	4822 051 30103	10kΩ	5%	1/16W CHIP
RD07	4822 051 30473	47kΩ	5%	1/16W CHIP
RD08	4822 051 30473	47kΩ	5%	1/16W CHIP
RD09	4822 051 30103	10kΩ	5%	1/16W CHIP
RD10	4822 051 30103	10kΩ	5%	1/16W CHIP
RD31	4822 051 30473	47kΩ	5%	1/16W CHIP
RD32	4822 051 30473	47kΩ	5%	1/16W CHIP
RD33	4822 051 30103	10kΩ	5%	1/16W CHIP
RD34	4822 051 30103	10kΩ	5%	1/16W CHIP
RD35	4822 051 30103	10kΩ	5%	1/16W CHIP
RD36	4822 051 30103	10kΩ	5%	1/16W CHIP
RD37	4822 051 30473	47kΩ	5%	1/16W CHIP
RD38	4822 051 30473	47kΩ	5%	1/16W CHIP
RD39	4822 051 30103	10kΩ	5%	1/16W CHIP
RD40	4822 051 30103	10kΩ	5%	1/16W CHIP
RD51	4822 051 30473	47kΩ	5%	1/16W CHIP
RD52	4822 051 30473	47kΩ	5%	1/16W CHIP
RD53	4822 051 30103	10kΩ	5%	1/16W CHIP
RD54	4822 051 30103	10kΩ	5%	1/16W CHIP
RD55	4822 051 30103	10kΩ	5%	1/16W CHIP
RD56	4822 051 30103	10kΩ	5%	1/16W CHIP
RD57	4822 051 30473	47kΩ	5%	1/16W CHIP
RD58	4822 051 30473	47kΩ	5%	1/16W CHIP
RD59	4822 051 30102	1kΩ	5%	1/16W CHIP
RD60	4822 051 30471	470Ω	5%	1/16W CHIP
RD61	4822 051 30105	1MΩ	5%	1/16W CHIP
RD62	4822 051 30103	10kΩ	5%	1/16W CHIP
RD63	4822 051 30103	10kΩ	5%	1/16W CHIP
RD64	4822 051 30103	10kΩ	5%	1/16W CHIP
RK01	4822 051 30104	100kΩ	5%	1/16W CHIP
RK02	4822 051 30104	100kΩ	5%	1/16W CHIP
RK03	4822 051 30104	100kΩ	5%	1/16W CHIP
RK04	4822 051 30104	100kΩ	5%	1/16W CHIP
RK05	4822 051 30102	1kΩ	5%	1/16W CHIP
RK06	4822 051 30102	1kΩ	5%	1/16W CHIP
RK07	4822 051 30102	1kΩ	5%	1/16W CHIP
RK08	4822 051 30102	1kΩ	5%	1/16W CHIP
RK11	4822 051 30008	0Ω	5%	1/16W CHIP
RK12	4822 051 30008	0Ω	5%	1/16W CHIP
RK13	4822 116 83212	18kΩ	5%	1/16W CHIP
RK14	4822 116 83212	18kΩ	5%	1/16W CHIP
RK15	4822 051 30103	10kΩ	5%	1/16W CHIP
RK16	4822 051 30103	10kΩ	5%	1/16W CHIP
RK17	4822 051 30334	330kΩ	5%	1/16W CHIP
RK18	4822 051 30334	330kΩ	5%	1/16W CHIP
RK19	4822 116 83213	270Ω	5%	1/16W CHIP
RK20	4822 116 83213	270Ω	5%	1/16W CHIP
RK21	4822 051 30333	33kΩ	5%	1/16W CHIP
RK22	4822 113 90107	4.7Ω	5%	1/4W FUSIBLE
RK25	4822 051 30008	0Ω	5%	1/16W CHIP
RK26	4822 051 30008	0Ω	5%	1/16W CHIP
RK27	4822 051 30008	0Ω	5%	1/16W CHIP
RK28	4822 113 90107	4.7Ω	5%	1/4W FUSIBLE
RR01	4822 051 30759	75Ω	5%	1/16W CHIP
RR02	4822 051 30759	75Ω	5%	1/16W CHIP
RR03	4822 116 83213	270Ω	5%	1/16W CHIP
RR04	4822 051 30103	10kΩ	5%	1/16W CHIP
RR05	4822 051 30103	10kΩ	5%	1/16W CHIP
RR06	4822 051 30008	0Ω	5%	1/16W CHIP
RR07	4822 051 30008	0Ω	5%	1/16W CHIP
RR08	4822 051 30008	0Ω	5%	1/16W CHIP
RR09	4822 051 30473	47kΩ	5%	1/16W CHIP
R601	4822 051 30103	10kΩ	5%	1/16W CHIP
R602	4822 051 30473	47kΩ	5%	1/16W CHIP
R603	4822 051 30103	10kΩ	5%	1/16W CHIP
R604	4822 051 30101	100Ω	5%	1/16W CHIP
R605	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R606	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R607	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R608	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R609	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R610	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R611	4822 051 30473	47kΩ	5%	1/16W CHIP
R612	4822 051 30473	47kΩ	5%	1/16W CHIP
R621	4822 051 30008	0Ω	5%	1/16W CHIP
R622	4822 051 30008	0Ω	5%	1/16W CHIP
R623	4822 051 30008	0Ω	5%	1/16W CHIP
R624	4822 051 30008	0Ω	5%	1/16W CHIP
R631	4822 051 30101	100Ω	5%	1/16W CHIP
R632	4822 051 30103	10kΩ	5%	1/16W CHIP

ELECTRICAL PARTS LIST

R633	4822 051 30103	10kΩ	5%	1/16W CHIP
R634	4822 051 30101	100Ω	5%	1/16W CHIP
R635	4822 051 30103	10kΩ	5%	1/16W CHIP
R636	4822 051 30103	10kΩ	5%	1/16W CHIP
R637	4822 051 30103	10kΩ	5%	1/16W CHIP
R638	4822 051 30101	100Ω	5%	1/16W CHIP
R651	4822 051 30105	1MΩ	5%	1/16W CHIP
R652	4822 051 30101	100Ω	5%	1/16W CHIP
R653	4822 051 30103	10kΩ	5%	1/16W CHIP
R654	4822 051 30008	0Ω	5%	1/16W CHIP
R681	4822 051 30008	0Ω	5%	1/16W CHIP
R691	4822 051 30104	100kΩ	5%	1/16W CHIP
R692	4822 051 30105	1MΩ	5%	1/16W CHIP
R693	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R694	4822 051 30103	10kΩ	5%	1/16W CHIP
R695	4822 051 30103	10kΩ	5%	1/16W CHIP
R696	4822 117 12139	22Ω	5%	1/16W CHIP
R697	4822 051 30472	4.7kΩ	5%	1/16W CHIP
R698	4822 051 30472	4.7kΩ	5%	1/16W CHIP

COILS & FILTERS

L601	4822 242 73843	EMI 0.022µF
L603	4822 242 73843	EMI 0.022µF
L604	4822 242 73843	EMI 0.022µF
L659	4822 157 10884	EMI BLM11A221S
L660	4822 157 10884	EMI BLM11A221S
L671	4822 157 10884	EMI BLM11A221S
L672	4822 157 10884	EMI BLM11A221S
L673	4822 157 10884	EMI BLM11A221S
L674	4822 157 10884	EMI BLM11A221S
L675	4822 157 10884	EMI BLM11A221S
L676	4822 157 10884	EMI BLM11A221S

DIODES

D601	4822 130 80522	CHIP 1SS300 DAP202U UMT
D631	4822 130 80522	CHIP 1SS300 DAP202U UMT

TRANSISTORS & INTEGRATED CIRCUITS

QD01	4822 209 33812	TDA1305T DAC
QD02	4822 209 83357	NJM4560 FLAT PACK
QD31	4822 209 33812	TDA1305T DAC
QD32	4822 209 83357	NJM4560 FLAT PACK
QD51	4822 209 33812	TDA1305T DAC
QD52	4822 209 83357	NJM4560 FLAT PACK
QD53	4822 130 43818	2SC2878 A B
QD54	4822 130 61227	DTA114ES ETC
QK01	4822 209 16148	SAA7367 2CH ADC
QK02	4822 209 14615	NJM2115M
QR01	4822 209 63383	74HC4066 AF FLAT PACK
QR02	4822 209 33578	TDA1315 DAIO
Q601	4822 209 16144	DSP56002PV66
Q602	4822 209 15899	8X32K SRAM <15NS SOJ TAPING
Q603	4822 209 15899	8X32K SRAM <15NS SOJ TAPING
Q604	4822 209 15899	8X32K SRAM <15NS SOJ TAPING
Q631	4822 209 16145	DSPF56009FJ81 AC-3DECODER
Q651	4822 209 31568	CMOS 74HCU04 FLAT TAPING
Q653	4822 209 70988	74HC125 SOP
Q654	4822 209 63379	74HC08 SOP
Q655	4822 209 32879	TC74HC157A SOP
Q656	4822 209 31935	TC74HC374AF SOP
Q657	5322 209 73187	74HC04 SOP
Q658	4822 209 73856	74HC86 SOP
Q659	4822 209 63379	74HC08 SOP
Q660	4822 209 31929	74HC32 SOP
Q661	4822 209 16146	74HC174 SOP
Q662	4822 209 16147	74HC161 SOP
Q663	4822 209 32879	TC74HC157A SOP TAPING
Q691	4822 209 16189	ONE TIME PROM HD6473257CP10

ELECTRICAL PARTS LIST

P704-MAIN AMP CIRCUIT BOARD

MISCELLANEOUS

F802	4822 253 30358	⚠	FUSE 5A 250V
F803	4822 253 30358	⚠	FUSE 5A 250V
LN01	4822 280 10305		RELAY VB-18MBU-565-UL3
LN02	4822 280 10305		RELAY VB-18MBU-565-UL3
LN03	4822 280 20501	⚠	RELAY MR62-24SR 24V
LN51	4822 280 10305	⚠	RELAY VB-18MBU-565-UL3
J702	4822 267 10716		PLUG TAC-P20P BASE POST

CAPACITORS

CN03	4822 124 21821	22µF	20%	16V
CN04	4822 124 21982	3.3µF		50V
CN05	4822 122 40617	0.1µF	+80%-20%	50V
CN06	4822 124 23056	100pF	10%	50V
CN07	4822 124 23056	47µF		16V
CN08	4822 124 23053	1µF		50V
CN09	4822 126 10935	100µF		10V
CN10	4822 122 40617	0.1µF	+80%-20%	50V
CN12	4822 122 40617	100pF	10%	50V
CN13	4822 122 40459	100pF	10%	50V
CN14	4822 122 40459	100pF	10%	50V
CN15	4822 122 40459	100pF	10%	50V
CN16	4822 122 40459	100pF	10%	50V
C701	4822 124 22275	47µF	20%	10V
C702	4822 124 22275	47µF	20%	10V
C703	4822 122 31178	680 pF	10%	50V
C704	4822 122 31178	680 pF	10%	50V
C705	5322 122 32335	330pF	10%	50V
C706	5322 122 32335	330pF	10%	50V
C707	4822 124 40198	470µF		6.3V
C708	4822 124 40198	470µF		6.3V
C709		1µF	20%	100V
C710		1µF	20%	100V
C711	4822 124 23562	10µF	20%	100V
C712	4822 124 23562	10µF	20%	100V
C713	4822 122 31173	220pF	10%	50V
C714	4822 122 31173	220pF	10%	50V
C715	4822 122 31205	47pF	5%	50V
C716	4822 122 31205	47pF	5%	50V
C719	4822 124 23068	220µF	20%	63V
C720	4822 124 23068	220µF	20%	63V
C721	4822 124 23068	220µF	20%	63V
C722	4822 124 23068	220µF	20%	63V
C723	4822 124 90351	0.1µF	20%	50V
C724	4822 124 90351	0.1µF	20%	50V
C725	4822 124 90351	0.1µF	20%	50V
C726	4822 124 90351	0.1µF	20%	50V
C751	4822 124 22275	47µF	20%	10V
C752	4822 122 31178	680 pF	10%	50V
C753	5322 122 32335	330pF	10%	50V
C754	4822 124 40198	470µF		6.3V
C756	4822 124 23562	10µF	20%	100V
C757	4822 122 31173	220pF	10%	50V
C758	4822 122 31205	47pF	5%	50V
C759		1µF	20%	100V
C760	4822 124 23068	220µF	20%	63V
C761	4822 124 23068	220µF	20%	63V
C762	4822 124 41604	0.1µF		50V
C763	4822 124 41604	0.1µF		50V
C801	4822 126 12453	0.01µF	+80%-20%	500V
C802	4822 126 14257	10000µF		63V
C803	4822 126 14257	10000µF		63V
C804	4822 126 12453	0.01µF	+80%-20%	500V
C805	4822 124 80646 ⚠	8200µF	20%	56V
C806	4822 124 80646 ⚠	8200µF	20%	56V
C807	4822 122 30043	0.01µF	+80%-20%	50V
C808	4822 122 30043	0.01µF	+80%-20%	50V
C809	4822 124 21664	3300µF		25V
C810	4822 124 21664	3300µF		25V
C811	4822 122 30043	0.01µF	+80%-20%	50V
C812	4822 122 30043	0.01µF	+80%-20%	50V
C813	4822 124 41139	100µF		16V
C814	4822 124 41139	100µF		16V
C815	4822 122 30043	0.01µF	+80%-20%	50V
C816	4822 122 30043	0.01µF	+80%-20%	50V
C817	4822 124 21992	2200µF		16V
C818	4822 124 21992	2200µF		16V
C819	4822 126 14258	6800µF		16V
C820	4822 122 40586	10000pF	20%	
C821	4822 124 41139	100µF		16V
C822	4822 124 41139	100µF		16V
C823	4822 124 41139	100µF		16V
C824	4822 122 30043	0.01µF	+80%-20%	50V
C825	4822 124 41139	100µF		16V
C826	4822 124 41139	100µF		16V
C827	4822 124 41139	100µF		16V
C828	4822 124 41139	100µF		16V
C829	4822 124 41139	100µF		16V

COILS & FILTERS

L701	4822 157 70022	AIR SPK CHOCK
L702	4822 157 70022	AIR SPK CHOCK
L751	4822 157 70022	AIR SPK CHOCK

RESISTORS

RN01	4822 052 10471	470Ω	5%	1/6W
RN02	4822 052 10471	470Ω	5%	1/6W
RN03	4822 116 52271	33kΩ	5%	1/6W
RN04	4822 116 52271	33kΩ	5%	1/6W
RN05	4822 050 11002	1kΩ	5%	1/6W
RN06	4822 050 11002	1kΩ	5%	1/6W
RN07	4822 116 52257	22kΩ	5%	1/6W
RN08	4822 116 52257	22kΩ	5%	1/6W
RN10	4822 116 83961	6.8kΩ	5%	1/6W
RN11	4822 116 83884	47kΩ	5%	1/6W
RN12	4822 116 52283	4.7kΩ	5%	1/6W
RN13	4822 116 83884	47kΩ	5%	1/6W
RN14	4822 116 83884	47kΩ	5%	1/6W
RN15	4822 116 52234	100kΩ	5%	1/6W
RN16	4822 116 52303	8.2kΩ	5%	1/6W
RN20	4822 050 22262	2.2kΩ	5%	1/4W
RN21	4822 116 83884	47kΩ	5%	1/6W
RN22	4822 116 52271	33kΩ	5%	1/6W
RN23	4822 116 52297	68kΩ	5%	1/6W
RN24	4822 116 52297	68kΩ	5%	1/6W
RN25	4822 116 52297	68kΩ	5%	1/6W
RN26	4822 116 52297	68kΩ	5%	1/6W
RN27	4822 053 10561	560Ω	5%	1W
RN28	4822 053 10561	560Ω	5%	1W
RN30	4822 116 83864	10kΩ	5%	1/6W
RN31	4822 116 83864	10kΩ	5%	1/6W
RN32	4822 116 52257	22kΩ	5%	1/6W
RN33	4822 116 83864	10kΩ	5%	1/6W
RN35	4822 052 10109 ⚠	10Ω	5%	1/6W
RN36	4822 116 52256	2.2kΩ	5%	1/6W
RN41	4822 116 52176	10Ω	5%	1/6W
RN42	4822 116 52176	10Ω	5%	1/6W
RN43	4822 052 10101 ⚠	100Ω	5%	1/6W
RN44	4822 052 10101 ⚠	100Ω	5%	1/6W
RN45	4822 052 10101 ⚠	100Ω	5%	1/6W
RN46	4822 052 10101 ⚠	100Ω	5%	1/6W

ELECTRICAL PARTS LIST

RN51	4822 052 10471	470Ω	5%	1/6W
RN52	4822 116 52271	33kΩ	5%	1/6W
RN53	4822 050 11002	1kΩ	5%	1/6W
RN54	4822 116 52257	22kΩ	5%	1/6W
RN55	4822 116 52297	68kΩ	5%	1/6W
RN56	4822 116 52176	10Ω	5%	1/6W
RN57	4822 052 10101 ⚠	100Ω	5%	1/6W
RN58	4822 052 10101 ⚠	100Ω	5%	1/6W
RN61	4822 116 52283	4.7kΩ	5%	1/6W
RN62	4822 116 52283	4.7kΩ	5%	1/6W
RN63	4822 101 11664	100Ω	TRIMMING	
RN64	4822 101 11664	100Ω	TRIMMING	
RN70	4822 101 11664	100Ω	TRIMMING	
R701	4822 116 52271	33kΩ	5%	1/6W
R702	4822 116 52271	33kΩ	5%	1/6W
R703	4822 050 11002	1kΩ	5%	1/6W
R704	4822 050 11002	1kΩ	5%	1/6W
R705	4822 116 83872	220Ω	5%	1/6W
R706	4822 116 83872	220Ω	5%	1/6W
R707	4822 116 52243	1.5kΩ	5%	1/6W
R708	4822 116 52243	1.5kΩ	5%	1/6W
R709	4822 116 52226	560Ω	5%	1/6W
R710	4822 116 52226	560Ω	5%	1/6W
R711	4822 116 83868	150Ω	5%	1/6W
R712	4822 116 83868	150Ω	5%	1/6W
R713	4822 116 52243	1.5kΩ	5%	1/6W
R714	4822 116 52243	1.5kΩ	5%	1/6W
R715	4822 116 83876	270Ω	5%	1/6W
R716	4822 116 83876	270Ω	5%	1/6W
R717	4822 116 83874	220kΩ	5%	1/6W
R718	4822 116 83874	220kΩ	5%	1/6W
R719	4822 116 83884	47kΩ	5%	1/6W
R720	4822 116 83884	47kΩ	5%	1/6W
R721	4822 052 10561 ⚠	560Ω	5%	1/6W
R722	4822 052 10561 ⚠	560Ω	5%	1/6W
R723	4822 052 10561 ⚠	560Ω	5%	1/6W
R724	4822 052 10561 ⚠	560Ω	5%	1/6W
R725	4822 052 10561 ⚠	560Ω	5%	1/6W
R726	4822 052 10561 ⚠	560Ω	5%	1/6W
R727	4822 116 52243	1.5kΩ	5%	1/6W
R728	4822 116 52243	1.5kΩ	5%	1/6W
R729	4822 052 10561 ⚠	560Ω	5%	1/6W
R730	4822 052 10561 ⚠	560Ω	5%	1/6W
R731	4822 052 10561 ⚠	560Ω	5%	1/6W
R732	4822 052 10561 ⚠	560Ω	5%	1/6W
R733	4822 116 52234	100kΩ	5%	1/6W
R734	4822 116 52234	100kΩ	5%	1/6W
R737	4822 052 10569 ⚠	560Ω	5%	1/6W
R738	4822 052 10569 ⚠	560Ω	5%	1/6W
R739	4822 052 10569 ⚠	560Ω	5%	1/6W
R740	4822 052 10569 ⚠	560Ω	5%	1/6W
R741	4822 116 83961	6.8kΩ	5%	1/6W
R742	4822 116 83961	6.8kΩ	5%	1/6W
R743	4822 100 20681	2.2kΩ	TRIMMING	
R744	4822 100 20681	2.2kΩ	TRIMMING	
R745	4822 116 52263	2.7kΩ	5%	1/6W
R746	4822 116 52263	2.7kΩ	5%	1/6W
R747	4822 116 52271	33kΩ	5%	1/6W
R748	4822 116 52271	33kΩ	5%	1/6W
R749	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R750	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R751	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R752	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R753	4822 050 21801 ⚠	180Ω	5%	1/4W
R754	4822 050 21801 ⚠	180Ω	5%	1/4W
R755	4822 052 10109 ⚠	10Ω	5%	1/4W
R756	4822 052 10109 ⚠	10Ω	5%	1/4W
R757	4822 052 10109 ⚠	10Ω	5%	1/4W
R758	4822 052 10109 ⚠	10Ω	5%	1/4W
R759	4822 113 80612 ⚠	0.18Ω	10%	5W
R760	4822 113 80612 ⚠	0.18Ω	10%	5W
R761	4822 052 10109	10Ω	5%	1/6W
R762	4822 052 10109	10Ω	5%	1/6W
R763	4822 053 10109	10Ω	5%	1W
R764	4822 053 10109	10Ω	5%	1W
R765	4822 116 52271	33kΩ	5%	1/6W
R766	4822 050 11002	1kΩ	5%	1/6W
R767	4822 116 83872	220Ω	5%	1/6W
R768	4822 116 52243	1.5kΩ	5%	1/6W
R769	4822 116 52226	560Ω	5%	1/6W
R770	4822 116 83868	150Ω	5%	1/6W
R771	4822 116 52243	1.5kΩ	5%	1/6W
R772	4822 116 83876	270Ω	5%	1/6W
R773	4822 116 83874	220kΩ	5%	1/6W
R774	4822 116 83884	47kΩ	5%	1/6W
R775	4822 052 10561 ⚠	560Ω	5%	1/6W
R776	4822 052 10561 ⚠	560Ω	5%	1/6W
R777	4822 052 10561 ⚠	560Ω	5%	1/6W
R778	4822 116 52243	1.5kΩ	5%	1/6W
R779	4822 052 10561	560Ω	5%	1/6W
R780	4822 052 10561	560Ω	5%	1/6W
R781	4822 116 52234	100kΩ	5%	1/6W
R783	4822 052 10569 ⚠	56Ω	5%	1/6W
R784	4822 052 10569 ⚠	56Ω	5%	1/6W
R785	4822 116 83961	6.8kΩ	5%	1/6W
R786	4822 100 20681	2.2kΩ	TRIMMING	
R787	4822 116 52263	2.7kΩ	5%	1/6W
R788	4822 116 52271	33kΩ	5%	1/6W
R789	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R790	4822 052 10228 ⚠	2.2Ω	5%	1/6W
R791	4822 050 21801 ⚠	180Ω	5%	1/4W
R792	4822 052 10109 ⚠	10Ω	5%	1/4W
R793	4822 052 10109 ⚠	10Ω	5%	1/4W
R794	4822 113 80612 ⚠	0.18Ω	10%	5W
R795	4822 052 10109	10Ω	5%	1/6W
R796	4822 053 10109	10Ω	5%	1W
R797	4822 050 11002	1kΩ	5%	1/6W
R798	4822 050 11002	1kΩ	5%	1/6W
R799	4822 050 11002	1kΩ	5%	1/6W

DIODES

DN01	4822 130 82421	1D3 1A 200V
DN02	4822 130 82421	1D3 1A 200V
DN03	4822 130 82421	1D3 1A 200V
DN04	4822 130 82421	1D3 1A 200V
DN07	4822 130 80837	HSS81TD 150V 150MA
DN08	4822 130 80837	HSS81TD 150V 150MA
DN09	4822 130 82421	1D3 1A 200V
DN51	4822 130 82421	1D3 1A 200V
DN52	4822 130 80837	HSS81TD 150V 150MA
D701	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D702	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D703	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D704	4822 130 32362	1SS176 MA165 1SS254 30V 0.1A
D705	4822 130 80837	HSS81TD 150V 150MA
D706	4822 130 80837	HSS81TD 150V 150MA
D707	4822 130 80837	HSS81TD 150V 150MA
D708	4822 130 80837	HSS81TD 150V 150MA
D709	4822 130 31554	ZENER MTZJ4.3B
D710	4822 130 31554	ZENER MTZJ4.3B
D711	4822 130 31554	ZENER MTZJ4.3B
D712	4822 130 31554	ZENER MTZJ4.3B

ELECTRICAL PARTS LIST

D751	4822 130 32362		1SS176 MA165 1SS254 30V 0.1A
D752	4822 130 32362		1SS176 MA165 1SS254 30V 0.1A
D753	4822 130 80837		HSS81TD 150V 150MA
D754	4822 130 80837		HSS81TD 150V 150MA
D755	4822 130 31554		ZENER MTZJ4.3B
D756	4822 130 31554		ZENER MTZJ4.3B
D801	4822 130 33133	⚠	D5FB20 200V 5A
D802	4822 130 31007	⚠	S4VB20
D803	4822 130 33057	⚠	S2VB20
D804	4822 130 33057	⚠	S2VB20
D805	4822 130 82421		1D3 1A 200V
D806	4822 130 82421		1D3 1A 200V
D807	4822 130 82421		1D3 1A 200V
D808	4822 130 82421		1D3 1A 200V
D809	4822 130 82421		1D3 1A 200V

TRANSISTORS & INTEGRATED CIRCUITS

QN01	4822 130 43233		2SC2240 GR OR BL
QN02	4822 130 43233		2SC2240 GR OR BL
QN03	4822 130 42949		2SA970 GR OR BL
QN04	4822 209 83312		TA7317P
QN07	4822 130 42715		2SA608SP 2SA1048 2SA1309 2SA933S
QN08	4822 130 60696		2SC1627 O Y 80V
QN51	4822 130 43233		2SC2240 GR OR BL
QN81	4822 130 61227		DTA114ES UN4111 10K
Q701	4822 130 42949		2SA970 GR OR BL
Q702	4822 130 42949		2SA970 GR OR BL
Q703	4822 130 42949		2SA970 GR OR BL
Q704	4822 130 42949		2SA970 GR OR BL
Q705	4822 130 42949		2SA970 GR OR BL
Q706	4822 130 42949		2SA970 GR OR BL
Q707	4822 130 43233		2SC2240 GR OR BL
Q708	4822 130 43233		2SC2240 GR OR BL
Q709	4822 130 43233		2SC2240 GR OR BL
Q710	4822 130 43233		2SC2240 GR OR BL
Q711	4822 130 42999		2SA1145 O OR Y
Q712	4822 130 42999		2SA1145 O OR Y
Q713	4822 130 43283		2SC2705 O OR Y
Q714	4822 130 43283		2SC2705 O OR Y
Q715	4822 130 60117	⚠	2SC3419Y 40V 0.8A
Q716	4822 130 60117	⚠	2SC3419Y 40V 0.8A
Q717	4822 130 60354	⚠	2SC3421 O Y 120V
Q718	4822 130 60354	⚠	2SC3421 O Y 120V
Q719	4822 130 60353	⚠	2SA1358 O Y 120V 1A
Q720	4822 130 60353	⚠	2SA1358 O Y 120V 1A
Q721	4822 130 10943	⚠	2SC5198 R O
Q722	4822 130 10943	⚠	2SC5198 R O
Q723	4822 130 10943	⚠	2SA1941 O Y
Q724	4822 130 10942	⚠	2SA1941 O Y
Q751	4822 130 42949		2SA970 GR OR BL
Q752	4822 130 42949		2SA970 GR OR BL
Q753	4822 130 42949		2SA970 GR OR BL
Q754	4822 130 43233		2SC2240 GR OR BL
Q755	4822 130 43233		2SC2240 GR OR BL
Q756	4822 130 42999		2SA1145 O OR Y
Q757	4822 130 43283		2SC2705 O OR Y
Q758	4822 130 60117	⚠	2SC3419Y 40V 0.8A
Q759	4822 130 60354	⚠	2SC3421 O Y 120V 1A
Q760	4822 130 60353	⚠	2SA1358 O Y 120V 1A
Q761	4822 130 10943	⚠	2SC5198 R O
Q762	4822 130 10942	⚠	2SA1941 R O
Q801	4822 209 83317	⚠	NJM7815FA +15V 1A
Q802	4822 209 31864	⚠	NJM7915FA -15V 1A
Q803	4822 209 31631	⚠	NJM7805FA +5V 1A
Q804	4822 209 63179	⚠	NJM7905FA -5V 1A
Q805	4822 209 31631	⚠	NJM7805FA +5V 1A

P754-SPK TERMINAL CIRCUIT BOARD

MISCELLANEOUS

F760	4822 253 30415	⚠	FUSE 1.6 A 250V
F761	4822 253 30415	⚠	FUSE 1.6 A 250V
F762	4822 253 30415	⚠	FUSE 1.6 A 250V
F763	4822 253 30415	⚠	FUSE 1.6 A 250V
J704	4822 265 11198		TERMINAL4P
J751	4822 265 11199		TERMINAL6P

CAPACITORS

C727	4822 122 30043	0.01µF	+80%-20%	50V
C728	4822 122 30043	0.01µF	+80%-20%	50V
C729	4822 122 30043	0.01µF	+80%-20%	50V
C730	4822 122 30043	0.01µF	+80%-20%	50V
C731	4822 122 30043	0.01µF	+80%-20%	50V
C732	4822 122 30043	0.01µF	+80%-20%	50V
C733	4822 122 30043	0.01µF	+80%-20%	50V
C734	4822 122 30043	0.01µF	+80%-20%	50V
C764	4822 122 30043	0.01µF	+80%-20%	50V
C765	4822 122 30043	0.01µF	+80%-20%	50V
C851	4822 126 14258	6800µF		16V
C852	4822 122 40588	0.022µF	10%	
C853	4822 122 40588	0.022µF	10%	
C854	4822 124 21852	470µF		16V
C855	4822 122 30043	0.01µF	+80%-20%	50V

DIODES

D851	4822 130 32968	RL203-M11 2A-200V
D852	4822 130 32968	RL203-M11 2A-200V
D853	4822 130 82421	1D3 1A 200V

INTEGRATED CIRCUIT

Q851	4822 209 31631	NJM7805FA +5V